The Impact of Peer Mentorship on Stress in Students in an Educational Doctorate Healthcare Program

Abigail Holzwarth

Nebraska Methodist College

Capstone IV 890

Dr. Valerie Anderson

June 18, 2022

Table of Contents

Abstract

Graduate students face many challenges throughout their education. Stress is commonly associated with higher education, which can be related to meeting the demands of a rigorous educational program, as well as demands in their personal and professional lives. The negative impact that stress can have on academic success, emotional well-being, physical health, and mental health is well-demonstrated in research. Educational institutions should provide resources for students that offer various methods of support to guide them through their education. Peer mentorship programs have been found to be effective means to meet this need for students. This capstone project examined the impact of a peer mentorship program on the stress levels of graduate students in an educational doctorate program. The Perceived Stress Scale was used to evaluate stress levels in educational doctorate students before and after the implementation of a peer mentorship program. Survey responses were limited, so could not be generalized to the entire population of students. Results did not indicate a significant decrease in stress after participation in a peer mentorship program but did demonstrate moderate to high levels of stress in many of the respondents.

Keywords: stress, Perceived Stress Scale, graduate students, healthcare education, peer mentor, peer mentorship, mentor, mentee

The Impact of Peer Mentorship on Students in an Educational Doctorate Healthcare Program

Graduate students in doctoral-level programs may encounter a variety of challenges throughout their education. Stress may be significant, due to the demanding nature and academic rigor of the degree plan. Students that choose this challenging path are committed to advancing their knowledge and skills and require support from their academic institution. Peer mentorship programs are common methods used to support students in their education. In a peer mentorship program, the mentor uses their experience and knowledge to enhance the personal and professional development of the mentee (Bell et al., 2017). Academic institutions can utilize a peer mentorship program to increase the support of graduate students which may decrease stress levels, enhance their education, and improve the success of their endeavors and their experience as a student.

Overview

Problem Description

It is well understood that graduate programs are rigorous, and students face pressure when undertaking this role in preparation for future professional roles. Students in these programs are often working professionals and must continue to also meet the demands of their personal lives. These factors can lead to high levels of stress. High-stress levels are associated with an increase in mental illness and can be greatest during the first year of an academic healthcare program (Thomas-Davis et al, 2020). In addition to high-stress levels, graduate students may also face social isolation, and loneliness, which can ultimately lead to a poor educational experience, poor program retention, or poor program outcomes (Bell et al., 2017).

Academic institutions can utilize the available research and this understanding of student experiences to develop programs to meet student needs. Peer mentorship programs are a cost-effective means to provide an additional resource for students that are proven to not only benefit the student mentee, but also the student mentor (Jacobs, 2017). Mentors and mentees participating in a peer mentorship program have reported expanded methods of learning, improved critical thinking and systematic learning, and a positive learning environment (Jacobs, 2017). This capstone project examined the impact of a peer mentorship program on perceived stress levels in students currently enrolled in an Educational Doctoral (EdD) program who are participating as mentors and mentees in the program. The goal of this project was to answer the question: How does a peer mentor program impact stress levels among mentors and mentees in a Doctoral EdD program at a private Midwest healthcare college following 10 weeks of peer engagement?

The Perceived Stress Scale (PSS) was utilized to measure the stress levels of student mentors and mentees participating in the peer mentorship program. Pre-intervention and post-intervention surveys were completed by both mentors and mentees to evaluate the impact of the peer mentorship program on perceived stress levels. Mentors and mentees in the program were asked to complete surveys during the first week of the spring semester and again ten weeks after program implementation. Outcomes were evaluated based on decreased levels of stress after the implementation of the peer mentor program by student mentors and mentees.

Available Knowledge

Problem

Graduate-level students may face many obstacles and challenges throughout their education, including stress, social isolation, and loneliness, in addition to the demands of their

educational program, professional roles, and personal lives. Stress can be a significant challenge for graduate students and impact physical, mental, and emotional well-being (Thomas-Davis et al., 2020). Higher stress levels are associated with increased mental illness, including depression, anxiety, sadness, and feeling overwhelmed, with stress levels most pronounced during the first year of a healthcare program (Thomas-Davis et al., 2020). Sources of stress include time management, prioritization, exams, and academic expectations (Thomas-Davis et al, 2020). Stress, a lack of support from the institution, and a lack of a sense of belonging are common experiences of graduate students (Bell et al., 2017). Stress can negatively impact sleep patterns, life satisfaction, mental health, physical well-being, and academic performance, and be associated with a failure to complete the graduate program (Tompkins et al., 2016). Certain stress levels can be beneficial in driving academic performance, though students must utilize available resources to manage this and ensure it does not become overwhelming (Thomas-Davis et al., 2020). Other challenges faced by graduate students include social isolation and loneliness. Ray et al. (2019) evaluated the occurrence of loneliness and social isolation in graduate and professional health students, finding that almost 20% of students reported social isolation, with the highest percentage in nursing students. These challenges can contribute to poor retention in graduate programs, with Bell et al. (2017) noting the completion rate for graduate nursing programs in Canada is only about 70%. According to Hill and Conceicão (2020), the program completion rate is about 50% for doctoral students in the United States.

Interventions

Student Resources

Course content and interaction with peers and faculty are important parts of online graduate education. Wilhelm-Chapin and Koszalka (2020) conducted a study on the value of

resources perceived by graduate students in an online course. The majority of students in the study primarily relied on the text, but also utilized online resources available to them and did prefer to have alternative resources available (Wilhelm-Chapin & Koszalka, 2020). Students who reported a high level of satisfaction in their program also reported high levels of social and faculty presence in their online courses (Wilhelm-Chapin & Koszalka, 2020).

Overall, social support has a positive impact on students. Students with adequate social support report lower levels of stress, improved program satisfaction, increased openness to feedback, increased levels of confidence, and are more likely to complete their graduate program (Tompkins et al., 2016). Social support from faculty, peers, family, or friends plays an important role in managing stress in a graduate program (Tompkins et al., 2016). Ray et al. (2019) identified that social support in graduate students can promote personal well-being and decrease burnout. Faculty support, social networks, and academic and social integration are integral to student success (Hill & Conceicão, 2020).

Peer Mentorship Program

The benefits of support services for graduate students are evident across the research. Peer mentors are recognized as an effective and successful means to meet student needs. A peer mentorship program should enhance the graduate student experience with a program that helps to improve the personal growth, confidence, leadership abilities, and academic success of students to develop competent and successful future healthcare leaders (Bell et al., 2017). Peer mentors can facilitate a sense of safety, provide academic and personal support, promote interactions between peers to foster a sense of belonging, and improve satisfaction with the educational program (Bell et al., 2017). Peer mentors provide academic and emotional support, assist in setting goals and time management, and facilitate social integration (Hill & Conceicão, 2020).

A literature review by Akinla et al. (2018) discusses that peer mentors improve personal and professional development, support transition into the educational program, and reduce stress. In undergraduate nursing populations, peer mentors have been shown to improve grades, critical thinking skills, and mental health, and increase support and social networks (Lombardo et al., 2017). Peer mentors are also seen as credible and trustworthy role models, which contributes to their effectiveness (Collier, 2017). Other benefits of a peer mentor program include being a cost-effective means of mentoring with the use of student mentor volunteers, the availability of potential mentors, and facilitating the development of the student identity (Collier, 2017). Additional benefits noted by Jacobs (2017) include communicating in a safe environment, enhancing recruitment and retention of graduate students, and facilitating the transition to professional practice. In a peer mentorship program, the mentor and mentee both experienced expanded learning, improved critical thinking, improved communication skills, a positive learning environment, and social interactions (Jacobs, 2017).

The process of developing and implementing a peer mentorship program is integral to its success. Bell et al. (2017) and Lombardo et al. (2017) both discuss the importance of the appropriate pairing of mentors and mentees. The background and personal preferences of both mentors and mentees must be considered for the relationship to be successful (Bell et al., 2017, Lombardo et al., 2017). Mentors should be able to build trust through confidential communication, sensitivity, and empathy, while mentees must be receptive to learning and feedback (Higgins & Newby, 2020).

Rationale

Theories and frameworks can be beneficial in helping to understand behavior and utilized to design programs to meet specific needs. Steven Jacobs (2017) completed a scoping review

and thematic analysis of knowledge and research related to peer mentorship programs in nursing students. From this review, Jacobs (2017) drew five common themes from the literature related to peer mentorship and developed a thematic representation of these themes (see Appendix A).

The themes Jacobs (2017) drew from the literature are *socialized learning, dialogue, supportive, meanings*, and *connections* (Jacobs, 2017). These themes are connected, continuous, and equal, without a hierarchy or set starting point (Jacobs, 2017). In the framework, *connections* are at the center of the circle, representing how mentors and mentees are connected, the safe environment for communication in peer mentorship, and how the other four themes are built on the connections between mentors and mentees (Jacobs, 2017). *Dialogue* is representative of the language between mentors and mentees in a safe environment utilized to facilitate open communication and is associated with socialization into a group and self-reflection (Jacobs, 2017). The theme *meanings* are associated with the development of social roles, defining the roles of student and professional, and the exposure to characteristics by a mentor that helps to develop these roles (Jacobs, 2017). The *supportive* theme describes the relationship between a mentor and mentee that is equal, non-judgmental, and safe (Jacobs, 2017). *Socialized learning* is defined as the enhanced learning that occurs for both mentors and mentees because of their social connection (Jacobs, 2017).

Jacobs' (2017) thematic representation supports a peer mentor program as an effective tool for Doctoral EdD students and utilization of this model can help in developing a successful peer mentor program. With this model, the importance of the mentor and mentee connection and relationship, a safe and supportive environment for communication, the learning that occurs in this environment, and the development of roles as a student and professional are well understood. Peer mentors can provide emotional support and academic guidance, act as role models, and

facilitate social integration and a sense of belonging (Collier, 2017). Developing an identity as a graduate student and a professional is important in developing self-confidence and taking on the role of a healthcare leader (Collier, 2017). A peer mentor in the same educational track, who understands the EdD student role and who has been successful in their educational endeavors, will be a role model who exemplifies behaviors that will contribute to success as a graduate student.

Purpose

The purpose of this capstone project was to evaluate the impact of a peer mentorship program on perceived stress levels in students currently enrolled in an Educational Doctoral (EdD) program who have participated as mentors and mentees in the program.

Methods

Context

With the knowledge of the challenges faced by graduate students, colleges are prepared to offer adequate support services to improve the recruitment, retention, experience, and success of students. A private college in the Midwest that implemented a peer mentorship program for incoming graduate students was utilized for this capstone project. This college is a healthcare-focused institution and offers undergraduate, graduate, and certificate programs in various healthcare fields, including nursing, sonography, respiratory therapy, and healthcare management. From their website, the organization promotes the preparation of students to contribute positively to society through service, community-based experiences, and leadership development. A group of faculty and advisors at this private college designed a pilot peer mentorship program that was launched in the spring 2022 semester for first-year students in the EdD program. One of these faculty members served as the clinical partner for this capstone

project. The peer mentorship program is designed based on the framework developed by Jacobs (2017). This capstone project explored the impact of the pilot program on the perceived stress levels of EdD students following the implementation of the peer mentor program.

Planning for this peer mentorship program began during the 2021 academic year. During the summer 2021 semester, incoming EdD students completed a survey administered by the faculty and advisor to evaluate interest and opinions about a peer mentor program. The survey included questions on opinions of a peer mentor program, the expected role of a mentor, and program structure. During the fall 2021 semester, current EdD students were provided information and expectations about the planned peer mentorship program launch with the option to apply to be a peer mentor. Student mentees were first-year students enrolled in the spring semester. The mentors were students in the same EdD program from an earlier cohort who have completed at least one semester of the program. Mentors and mentees were paired randomly by faculty members designing and implementing the program, and each mentor had one mentee.

Intervention

The peer mentorship program utilized in this capstone project was a pilot program for students in their first year of the EdD program. The peer mentorship program was initiated at the start of the spring semester in January 2022 and continued through the semester. Student mentors were asked to initiate contact with their mentees during the first week of the semester and encouraged to contact their mentees every two weeks. Students were able to choose their method of contact and increase or decrease the frequency of contact as needed. College faculty members checked in with student mentors monthly and student mentees at the mid-point of the semester to assess how the mentor program was progressing.

This capstone project evaluated the impact of this peer mentorship program on perceived stress levels utilizing the Perceived Stress Scale. With the understanding that all students may experience stress and a peer mentorship program can have a positive impact on both mentors and mentees, all participating students were asked to complete surveys. Evaluations were based on perceived stress levels for students in the EdD program who participated in the peer mentor program. The initial survey sent during the first week of the semester contained a demographic survey, including questions on gender, age grouping, and academic focus, and the Perceived Stress Scale (PSS). The Perceived Stress Scale (PSS) survey was distributed again ten weeks after program implementation. Each survey asked the student to indicate if they are a mentor or a mentee. The Perceived Stress Scale is one of the most used tools to measure the perception of stress (Cohen, 1994). The PSS is used to evaluate the life situations of an individual and their relation to stress (Cohen, 1994). The PSS was designed to evaluate unpredictable, uncontrollable, and overloaded parts of the respondent's life, with questions about current stress levels (Cohen, 1994). The questions of the PSS are general and non-specific, ask about thoughts and feelings during the last month, are designed at a junior high reading level, and were therefore appropriate for use in graduate students and evaluation of their perceived stress levels (Cohen, 1994).

The evaluation of stress levels was completed via anonymous digital surveys that were distributed to student email accounts by the faculty clinical partner for the investigator. The email contained a hyperlink that directed students to a Google form containing the survey questions. Survey responses were stored in the Google Drive of the investigator and were exported to an Excel spreadsheet once all survey responses were received. Survey respondents were asked to provide a unique identifier code consisting of the initials of their mother’s first and

middle names and the last two digits of a family member's phone number to match individual pre-intervention and post-intervention survey responses. It was noted in the distributed surveys that participation is optional.

Study of the Intervention

With the understanding of the negative impact stress can have on graduate students, it was important to evaluate the impact of the peer mentorship program on stress levels. This project evaluated perceived stress levels in graduate students before and after the implementation of a peer mentor program. From the survey responses received, perceived stress levels were compared for each respondent individually, for mentees and mentors, and for all students in the peer mentorship program that responded to the surveys. This information had the potential to demonstrate changes in perceived stress levels before and after the peer mentor program, and if there were more significant changes for mentors or mentees.

Measures

The pre-intervention survey distributed during the first week of the semester requested demographic information of the respondent, a question indicating if the student is a mentor or mentee, and the Perceived Stress Scale. The Perceived Stress Scale contains ten questions, asking the respondent to consider their feelings over the last month. Questions on the PSS ask about feelings of being upset, anger, losing control, being nervous, confidence in handling personal problems, and management of daily tasks. The questions are based on a Likert scale of zero (never) to four (very often). For the Perceived Stress Scale, a score between 0 and 13 is considered low stress, a score between 14 and 26 is considered moderate stress, and a score of 27 to 40 is considered high stress. The initial demographic and PSS surveys were distributed during

the first week of class; the second PSS survey was distributed ten weeks later. All peer mentor program participants were asked to complete the voluntary surveys.

Analysis

Statistical tests were used to assist in evaluating survey results. Demographic surveys were analyzed utilizing descriptive statistics to summarize the demographics of peer mentor program survey respondents. Inferential statistics with a dependent samples t-test was utilized to evaluate responses from the Perceived Stress Scale. The data collected from the surveys was transferred to Excel for analysis. Evaluation of survey responses examined for differences in the perceived stress levels before initiation of the peer mentor program and 10 weeks after implementation. The analysis evaluated for changes in perceived stress levels between the time of the peer mentorship program implementation and after ten weeks of participation in the peer mentor program. Survey results were analyzed for changes in perceived stress levels for each student and mentor and mentee groups. This information is presented utilizing tables and graphs that will allow for a visual representation of the survey data.

Ethical Considerations

Ethical considerations were addressed during the planning, implementation, and evaluation phases of this capstone project. The invitation for students participating in the peer mentorship program to complete the PSS surveys informed them of the purpose of this capstone project, that participation was voluntary and would have no impact on their academic status, and survey responses were anonymous and kept confidential and only accessed by the student investigator. The email to students also contained information on student support resources available to students at the academic institution. To prevent the identification of student survey responses, students were asked to provide a unique identification code to link the pre-

intervention and post-intervention surveys. Survey results were stored on a password-protected device only accessible by the student investigator. Approval for this project was given by the faculty of the EdD program and the Institutional Review Board for the academic institution. The student investigator and faculty mentor completed the Collaborative Institutional Training Initiative (CITI) training.

Risks and potential conflicts of interest were mitigated by the investigator. Students completing the survey did not encounter higher levels of risk than in routine daily activities. Since the Perceived Stress Scale may lead the student to recall stressful events, a list of student institution support resources was provided for the students. The investigator of this capstone project was a graduate assistant for the faculty members of the academic institution who designed and implemented the peer mentorship program and had assisted in planning and implementation of the peer mentorship program, including participation in the creation of the mentor applications, the mentor training video, and communication with mentorship program participants. The outcomes of this capstone project did not have an impact on the outcomes of the graduate assistant position. The planning and implementation of this capstone project were independent of the evaluation of the peer mentorship program that was performed by the academic institution.

Results

Results reported from this project include demographic information of pre-intervention and post-intervention survey participants, descriptive statistics of PSS scores, and results of a dependent samples t-test. Ten survey responses were received for the pre-intervention survey. Of the respondents, seven were mentors and three were mentees. In the age range demographic, 40% were in the 30 to 40 year age range, 40% were in the 40 to 50 year age range, and 20% were

in the 50 to 60 year age range. For academic focus, 50% of respondents were in the healthcare policy category, 40% of respondents were in the education category, and 10% of respondents were in the leadership category.

The post-intervention survey was distributed 10 weeks after the start of the spring semester. Eight survey responses were received, with seven mentor responses and one mentee response. For the age range category of these respondents, 50% were in the 30 to 40 year age range, 38% were in the 40 to 50 year age range, and 13% were in the 50 to 60 year age range. For the academic focus category, 25% of respondents reported a healthcare policy focus, 25% of respondents reported an education focus, and 50% of respondents reported a leadership focus.

The results of the Perceived Stress Scale score were evaluated with descriptive statistics including mean, standard deviation, maximum, and minimum (see Table 1).

Table 1

Perceived Stress Scale Results

	Pre-Intervention				Post-Intervention			
Variable	M	SD	Participant Score Range		M	SD	Minimum	Maximum
All Participants	13.5	6.8	5	24	17.75	8.43	4	30
Mentees	17.67	10.12			27	-		
Mentors	11.71	4.79			16.4285714	8.16		

A dependent samples *t*-test was conducted to compare the stress scores before and after participation in the peer mentor program. Only four respondents completed both the pre-intervention and post-intervention surveys, therefore those responses were the only data included in the dependent samples t-test to evaluate for changes in stress levels before and after participation in the peer mentor program. There was no significant difference found between the stress scores before participating in the peer mentor program (M=14.5, SD=6.61) and after participating in the peer mentor program (M=17.71, SD=6.65); t (3) = 0.34, p = 0.5.

Discussion

Summary

Results of the Perceived Stress Scale surveys contribute to the understanding of stress levels in graduate students. The results demonstrated changes to stress levels before and after implementation, though stress levels did not decrease as anticipated. Average stress levels were increased in the post-intervention survey with a higher maximum stress score. With the increase in stress levels, the results are important to recognizing high-stress levels in graduate students, understanding the impact of stress, and providing adequate resources that will manage stress levels in these populations. While decreased stress levels cannot be attributed to participation in the peer mentorship program, this project demonstrates high-stress levels in graduate students and supports the need for student resources.

Interpretation

The data collected from the demographic surveys and Perceived Stress Scale did not demonstrate a positive association between a peer mentorship program and decreased stress levels. For all participants, the pre-intervention survey demonstrated a mean stress score of 13.5 indicating low stress, and a post-intervention mean stress score of 17.75 indicating moderate stress. In the mentee respondents, the pre-intervention mean was 17.67, indicating moderate stress levels. The pre-intervention mean for mentor respondents was 11.71, indicating low stress. The lowest stress score in the pre-intervention surveys was a score of 5; the highest stress score in the pre-intervention responses was 24. For the post-intervention survey, there was only one mentee respondent, so descriptive statistics were not reported. The post-intervention mean stress score for mentor respondents was 16.43, indicating moderate stress. In the post-intervention surveys, the lowest stress score was 4 and the highest stress score was 30.

It is evident through the literature that graduate students can experience high levels of stress and the effects can be detrimental, and peer mentorship programs can help to address this issue, as well as others. The results of this study did not have the anticipated decrease in stress levels. This could be because of the unstructured program that was used for this pilot project. A more structured program with a regimented schedule and mandatory participation could result in a more significant impact on stress levels. Low survey responses, especially in the mentee population, also contributed to the results, as it was anticipated that mentees would see the greatest benefit from the program. Further opportunities for peer mentorship programs should be explored at this institution with more in-depth evaluations of impact and outcomes.

Limitations

Limits to this study could be associated with survey distribution and timing, levels of mentorship participation, number of respondents, the population surveyed, and evaluation topic. Surveys were distributed via email to students by a faculty member. Pre- and post-surveys were distributed by different faculty members. Pre-intervention surveys were distributed during the first week of the semester. The timing of post-intervention survey distribution coincided with survey week at the academic institution, which involves frequent emails requesting students to complete surveys. Students may be overwhelmed at the start of the semester and not be willing or able to spend the to complete surveys, or students were overwhelmed with emails requesting survey completion. Low response rates occurred, with limited mentee participation, so the results cannot be generalized to participating mentees or all EdD students. The surveys were only distributed to EdD students; response rates and survey results could be different in other student populations. There are many other difficulties, besides stress, faced by graduate students

that can be impacted by a peer mentor program that could be evaluated to determine the success and effectiveness of a peer mentorship program.

Conclusion

The revised standards for quality improvement reporting excellence (SQUIRE 2.0) were used as a framework for reporting this project. Understanding of the difficulties faced by graduate students, the negative impact of stress on student outcomes, and the benefits of a peer mentorship program must be utilized when developing support programs for graduate students. While the results of this project did not show improvement in stress levels after participation in a peer mentorship program, the survey results did indicate students are experiencing moderate to high levels of stress at the beginning and mid-point of the semester. Continued development of peer mentorship programs is important to providing support for graduate students, helping to meet their needs, and ensuring success in their endeavors with potential positive impacts to stress levels, mental health, feelings of social isolation, program retention rates, and academic success. Understanding and utilizing this knowledge should further support and aid in the development of peer mentorship programs in all academic programs.

References

Akinla, O., Hagan, P., & Atiomo, W. (2018). A systematic review of the literature describing the outcomes of near-peer mentoring programs for first-year medical students. *BMC Medical Education, 18*(1), 98. https://methodistlibrary.idm.oclc.org/login?url=http://search.ebscohost.com/login.aspx?direct=true&db=mdc&AN=29739376&site=ehost-live&scope=site

Bell, J., Marks, N., Hermann, J., & Klooster, A. (2017). Mentor us: A formal mentoring program for nurses in graduate education. *Quality Advancement in Nursing Education, 3*(2), https://qane-afi.casn.ca/cgi/viewcontent.cgi?article=1098&context=journal

Cohen, S. (1994). *Perceived Stress Scale.* North Ottawa Wellness Foundation. https://www.northottawawellnessfoundation.org/wp-content/uploads/2018/04/PerceivedStressScale.pdf

Collier, P. J. (2017). Why peer mentoring is an effective approach for promoting college student success. *Metropolitan Universities Journal, 28*(3), 9-18. https://journals.iupui.edu/index.php/muj/article/view/21539/20817

Higgins, K., & Newby, O. (2020). DNP student mentorship: Empowering students and nurse practitioner organizations. *The Nurse Practitioner, 45*(4), 42-47. https://methodistlibrary.idm.oclc.org/login?url=http://search.ebscohost.com/login.aspx?direct=true&db=mdc&AN=32205674&site=ehost-live&scope=site

Hill, L. H. & Conceicão, S. C. O. (2020). Program and instructional strategies supportive of doctoral students' degree completion. *Adult Learning, 31*(1), 36-44. https://methodistlibrary.idm.oclc.org/login?url=http://search.ebscohost.com/login.aspx?direct=true&db=afh&AN=141167704&site=ehost-live&scope=site

Jacobs, S. (2017). A Scoping Review Examining Nursing Student Peer Mentorship. *Journal of Professional Nursing: Official Journal of the American Association of Colleges of Nursing*, *33*(3), 212–223. https://doi-org.methodistlibrary.idm.oclc.org/10.1016/j.profnurs.2016.09.004

Lombardo, C., Wong, C., Sanzone, L., Filion, F., & Tsimicalis, A. (2017). Exploring mentees' perceptions of an undergraduate nurse peer mentorship program. *Journal of Nursing Education*, *56*(4), 227-230. https://methodistlibrary.idm.oclc.org/login?url=http://search.ebscohost.com/login.aspx?direct=true&db=ccm&AN=122365940&site=ehost-live&scope=site

Ray, M. E., Coon, J. M., Al-Jumaili, & Fullerton, M. (2019). Quantitative and qualitative factors associated with social isolation among graduate and professional health science students. *American Journal of Pharmaceutical Education*, *83*(7), 1558-1569. https://methodistlibrary.idm.oclc.org/login?url=http://search.ebscohost.com/login.aspx?direct=true&db=ccm&AN=139372222&site=ehost-live&scope=site

Thomas-Davis, A., Bullock, A. P., Hooper, H., & McCluney, M., K. (2020). The effects of stress on first-year graduate students in health professions. *Journal of the National Society of Allied Health*, *17*(1), 56-62. https://methodistlibrary.idm.oclc.org/login?url=http://search.ebscohost.com/login.aspx?direct=true&db=ccm&AN=146962898&site=ehost-live&scope=site

Tompkins, K. A., Brecht, K., Tucker, B., Neander, L. L., & Swift, J. K. (2016). Who matters most? The contribution of faculty, student-peers, and outside support in predicting graduate student satisfaction. *Training & Education in Professional Psychology*, *10*(2),

102-108. https://mcnair.siu.edu/_common/documents/univ-401a/predicting-graduate-student-satisfaction.pdf

Wilhelm-Chapin, M. K., & Koszalka, T. A. (2020). Graduate students' use and perceived value of learning resources in learning the content in an online course. *TechTrends: Linking Research & Practice to Improve Learning*, *64*(3), 361-372. https://methodistlibrary.idm.oclc.org/login?url=http://search.ebscohost.com/login.aspx?direct=true&db=afh&AN=143477398&site=ehost-live&scope=site

Appendix A

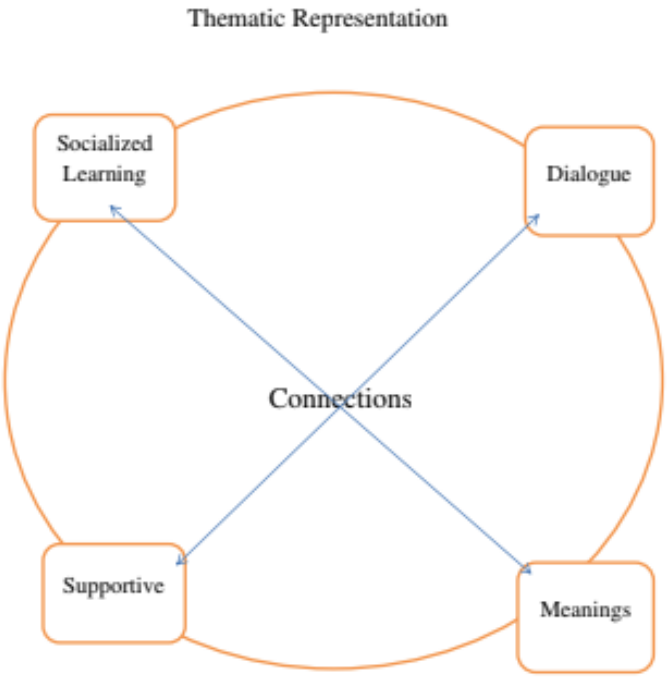

Fig. 2.