Finding Support: Evaluating Use of a Virtual DNP Final Project Peer Support Community in a Limited-Residency Program

Pamela Simon Card
Jacksonville University
May 27, 2020

Presented to DNP Chair: Pam Rillstone Ph.D., ARNP, CNS-BC, FT

In Partial Fulfillment of the Requirements for the degree of Doctor of Nursing Practice with specialization in Educational Leadership
They say it takes a village to raise a child - I would like to say it took a village to complete this project, and it would not have been possible without the support and encouragement of many.

**I DEDICATE THIS PROJECT IN LOVING MEMORY OF:**

My parents Erna and Fred Simon, who always loved, supported, and believed in me.

My husband William John Card, for his love, encouragement, and support of all my endeavors without reservation.

My grandmother Frieda Kakuschke Engel, who gifted me tuition for my first nursing degree.

**ACKNOWLEDGMENTS**

*I would like express my gratitude to my family to whom I owe many thanks:*

My uncle Dr. Karl-Heinz Reichstein, who inspired me to be the second person in our family to pursue a doctorate.

My aunt and uncle, Lorie and Jon Topol, who have been an ongoing source of love and support throughout my life.

My daughter Danielle, without whose support and encouragement this project would not have been accomplished.

*My sincere thanks and acknowledgment to the following people for their assistance in making this project possible:*

Dr. Pam Rillstone, for her invaluable patience, support, and guidance in completion of this doctoral project.

Dr. Hilary Morgan, Dr. Roberta Christopher, and members of the DNP committee for their guidance and support throughout my doctoral journey.

Lambda Rho at Large Chapter of Sigma Theta Tau International for selecting me as their 2018 Research grantee.

Stacie Butts and Dee Thornton for their support in recruitment and setting up of this project.

My fellow DNP students and friends who contributed to the implementation of this project.

My MSN thesis chair, Dr. Virginia Pidgeon, FAAN, who gave me confidence that I could be successful in graduate nursing education.

Thank you also to technology for making this doctoral project easier to write than my master’s thesis before we had computers!
Abstract

**Problem Statement:** The high number of doctoral students leaving their studies before completion of their degree is a concern of both students and educational institutions. Identification of barriers to DNP student persistence is needed, along with the development of strategies to address them.

**Project Purpose:** The primary aim of the project is to determine the effect of a virtual DNP Final Project Peer Support Community with Final Project Resources Toolkit on students' perception of connectedness, peer community and perceived stress regarding their DNP final project experience in a limited residency program.

**Methods:** A longitudinal, quasi-experimental one-group pre/post-intervention design was utilized to examine the effects of the virtual Final Project Peer Support Community on the perception of peer connectedness and perceived stress using the Doctoral Student Connectedness Scale and Perceived Stress Scale surveys along with a demographic and evaluation survey.

**Analysis/Results:** Ten participants completed the pre-intervention surveys, with 7 completing the post-intervention surveys. Comparison of differences between pre and post-intervention scores resulted in a statistically non-significant relationship between student use of the virtual community and student connectedness and perceived stress due to the small sample size with small and medium effect sizes. Evaluation surveys indicated participation in the DNP Final Project Peer Support Community was a positive experience for participants with additional positive comments made including ease of access, usefulness of the online Final Project Resources Toolkit, and appreciation of the opportunity to connect with other DNP students.

**Keywords:** doctoral student persistence, DNP students, limited-residency program, peer support, student connectedness, perceived stress, virtual community of practice
# TABLE OF CONTENTS

Dedication and Acknowledgements ................................................................. 2  
Abstract ............................................................................................................ 3  
Table of Contents ............................................................................................... 4  
List of Tables ..................................................................................................... 6  
Figures ............................................................................................................... 7  
Section 1: Identifying the Issue ........................................................................ 8  
  Background and Significance .......................................................................... 9  
Section 2: Problem Statement .......................................................................... 12  
  Project Purpose ............................................................................................... 12  
  Project Goal ................................................................................................... 12  
  Project Objectives ......................................................................................... 13  
Section 3: Review of the Literature  
  Purpose and Objectives .................................................................................. 14  
  Search Criteria and Strategies ....................................................................... 14  
  Synthesis of Relevant Literature ................................................................... 15  
  Summary of Current Evidence ....................................................................... 33  
  Definition of Terms ........................................................................................ 36  
Section 4: Project Framework  
  Quality Improvement Theory .......................................................................... 38  
  Change Theory ............................................................................................... 40  
  Conceptual Framework .................................................................................. 42  
  Conceptual Framework Summary ................................................................... 50  
Section 5: Project Description/Design  
  Project Design ............................................................................................... 51  
  Goal & Objectives ......................................................................................... 51  
  Project Site and Facility Support ..................................................................... 52  
  Population and Recruitment ......................................................................... 52  
  Privacy and Confidentiality ........................................................................... 53  
  Intervention .................................................................................................... 53  
  Implementation Plan & Procedures ............................................................... 54  
  Instruments/Measurement Tools ................................................................. 55  
  Project Process & Timeline ......................................................................... 58  
  Stakeholder Assessment ............................................................................... 59  
  Financial Considerations .............................................................................. 60  
  Ethical Considerations/Protection of Human Subjects .................................. 60  
  Sustainability ................................................................................................. 61
Section 6: Evaluation
Evaluation........................................................................................................63
Measurement ..................................................................................................63
Data Stewardship............................................................................................64
Data Analysis...................................................................................................64

Section 7: Project Findings
Description of Project Sample .........................................................................66
Demographic Survey Results ..........................................................................66
Pre and Post-intervention Survey Results .......................................................68
Evaluation of the effect of the DNP Final Project Peer Support Community ....76
DNP Final Project Peer Support Community Evaluation Survey Findings ......81
Project Results Summary ...............................................................................84
Discussion ........................................................................................................85

Section 8: Implications/Recommendations
Limitations & Barriers ....................................................................................90
Recommendations ............................................................................................92
Dissemination Plan ..........................................................................................93
Conclusion .......................................................................................................94

Reference List ..................................................................................................95

Appendices
Appendix A: Recruitment Letter and Informed Consent ................................108
Appendix B: Permission for use of the Doctoral Student Connectedness Scale...117
Appendix C: Permission for use of the Perceived Stress Scale ......................119
Appendix D: DNP Final Project Peer Support Community Demographic Survey ..120
Appendix E: Pre-Intervention Doctoral Student Connectedness Scale ...........122
Appendix F: Pre-Intervention Perceived Stress Scale ......................................123
Appendix G: Post-intervention Doctoral Student Connectedness Scale ..........124
Appendix H: Post-intervention Perceived Stress Scale .................................125
Appendix I: DNP Final Project Peer Support Community & Final Project Resources Tool Kit Evaluation Survey .........................................................126
Appendix J: Discussion Forum Provided Discussion Threads .........................128
Appendix K: Online Resources Toolkit List of Resources ..............................130
Appendix L: Recruitment Announcement .....................................................134
Appendix M: IRB Approval of Project .............................................................135
**LIST OF TABLES**

<table>
<thead>
<tr>
<th>Table</th>
<th>Description</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Summary of Demographic Variables</td>
<td>67</td>
</tr>
<tr>
<td>2.</td>
<td>Summary of Pre-intervention Doctoral Student Connectedness Scale Survey</td>
<td>69</td>
</tr>
<tr>
<td>3.</td>
<td>Summary of Post-intervention Doctoral Student Connectedness Scale Survey</td>
<td>70</td>
</tr>
<tr>
<td>4.</td>
<td>Summary of Pre-intervention Perceived Stress Scale Survey</td>
<td>72</td>
</tr>
<tr>
<td>5.</td>
<td>Summary of Post-intervention Perceived Stress Scale Survey</td>
<td>74</td>
</tr>
<tr>
<td>6.</td>
<td>Comparison of Means of DSCS Pre and Post-intervention Individual Questions</td>
<td>77</td>
</tr>
<tr>
<td>7.</td>
<td>Comparison of Means of PSS Pre and Post-intervention Individual Questions</td>
<td>79</td>
</tr>
<tr>
<td>8.</td>
<td>Comparison of means of PSS Pre and Post-intervention Total Scores</td>
<td>81</td>
</tr>
<tr>
<td>9.</td>
<td>Use of the DNP Final Project Peer Support Community and online Resources Toolkit</td>
<td>81</td>
</tr>
<tr>
<td>10.</td>
<td>Time spent in the DNP Final Project Peer Support Community</td>
<td>82</td>
</tr>
<tr>
<td>11.</td>
<td>Satisfaction with DNP Final Project Peer Support Community &amp; Final Project</td>
<td>83</td>
</tr>
<tr>
<td></td>
<td>Resources Toolkit</td>
<td></td>
</tr>
</tbody>
</table>
# LIST OF FIGURES

<table>
<thead>
<tr>
<th>Figure</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. FADE Quality Improvement Model</td>
<td>39</td>
</tr>
<tr>
<td>2. Roger's Process of Diffusion of Innovation for this QI Project</td>
<td>42</td>
</tr>
<tr>
<td>3. Transactional Model of Stress and Coping of Richard Lazarus</td>
<td>44</td>
</tr>
<tr>
<td>4. Stress Buffering Theory</td>
<td>45</td>
</tr>
<tr>
<td>5. Conditional Matrix of the Grounded Student Connectedness Theory</td>
<td>46</td>
</tr>
<tr>
<td>6. Developing the Community of Practice</td>
<td>48</td>
</tr>
<tr>
<td>7. Use of the Community of Practice in the Zone of Proximal Learning</td>
<td>49</td>
</tr>
<tr>
<td>8. Project Implementation Plan</td>
<td>55</td>
</tr>
</tbody>
</table>
Finding Support: Evaluating Use of a Virtual DNP Student Community in a Limited-Residency Program

Currently, an estimated 13% of the United States population report having a graduate or professional degree, with approximately 4.5% percent of Americans having earned a doctoral degree (United States Census Bureau, 2019). Individuals with doctoral degrees have the highest median income and the lowest unemployment rate (1.9%) of all degree levels (Bureau of Labor Statistics, 2010). However, a longstanding challenge to doctoral education is the high rate of student attrition worldwide (Council of Graduate Schools 2010, 2015, 2018). The overall awarding of earned doctorates is at an all-time high (National Science Foundation, 2017); however, graduation rates have not increased at the same rate as student enrollment (Council of Graduate Schools, 2016). Current attrition rates for residential doctoral students vary by field of study and are between 40 – 60% (Council of Graduate Schools, 2018; Litalien & Guay; 2015, Neale, Mc Fall & Ward, 2015), with 10-20% higher rates for distance education, online, and limited-residency programs (Terrell, Snyder, Dringus, & Maddrey, 2012).

An additional issue of concern related to doctoral educational program persistence is that of graduate student mental health and wellness. A recent global survey of 2,279 doctoral and master's students, from 234 institutions in 26 countries, indicated high rates of anxiety and depression in graduate students more than six times the rates found in the general population, contributing to the lack of study persistence and to program attrition (Evans, Bira, Gastelum, Weiss, & Vanderford, 2018). Doctoral student attrition has also been linked to both increased academic stress and feelings of social isolation due to the absence of meaningful peer connections (Ali & Kohun, 2006; Hawlery, 2003; Lewis, Ginsberg, Davies, & Smith, 2004; Lovitts, 2001, as cited in Jairam & Kahl, 2012, Terrell, Snyder, & Dringus, 2012).
With student graduation rates seen as indicators of individual success and program and university quality and effectiveness, attrition has a negative effect on students, often leaving them feeling unaccomplished, embarrassed, and depressed while leaving universities with poor graduation records and wasted time and finances for program costs (Tinto, 1993). Many students departing their doctoral programs often leave feeling a failure, and it may take much of a lifetime for these students to recover from feelings of unachieved ambition (Lovitts, 2001). This situation can be very costly for both the students and the educational institutions due to the resources invested in the program.

Section 1: Background and Significance

Doctoral student persistence and attrition is influenced by many different factors, including the transition doctoral students must make from being course-taking students to becoming independent researchers in the final stage of their doctoral program (Pifer & Baker, 2016). Doctoral students report feelings of isolation in the final phase of doctoral study and an increased need for faculty, advisor, and peer connectedness and community (Allen, 2014; Berry, 2017; Dupont, Meert, Galand, & Nils, 2013; Greene, 2015; Pancheri, Fowler, Wiggs, Schultz, Lewis, & Nurse, 2013; Petridis, 2015; Stracke & Kumar, 2014; Terrell et al., 2012). Additional factors affecting doctoral student persistence include feelings of stress in completing the dissertation or final project due to uncertainty regarding the process, challenges with time management, and feelings of being overwhelmed (Bean & Metzner, 1985; Brown, Anderson-Johnson & McPherson, 2016; Cardona, 2013; Deasy, Coughlan, Pironom, Jourdan, & Mannix-McNamara, 2014; Devos et al., 2017; Dupont, Meert, Galand, & Nils, 2013; Galdino, Martins, Haddad, Lourenço, Cruz, & Birolim, 2016; Hlbase, Dowling, Lindell, Underwood, & Barsman, 2016; Johnson, 2015; Silinda & Brubacher, 2016; Stallone, 2013; Volkert, Candela, & Bernacki, 2018).

Most research on doctoral persistence has been conducted with traditional in-person doctoral programs and full-time students, with face-to-face doctoral attrition rates in the United States being
reported as 40% to 60% (Council of Graduate Schools, 2010, 2018; Litalien & Guay, 2015; Neale et al., 2015). Recently, higher education has moved towards the use of non-traditional distance learning models, such as online and limited-residency models. Such non-traditional education models pose unique challenges for students and have been found to have attrition rates that can be 10-20% higher than students in traditional programs (Kennedy, Terrell, & Lohle, 2015; Terrell et al., 2012; Terrell, Snyder, & Dringus, 2009). These non-traditional distance education models include unique stressors and barriers affecting student persistence (Gazza & Hunker, 2014; Kennedy et al., 2015; Terrell et al., 2012). Many doctoral students are often older, part-time students, with family and professional work responsibilities in addition to their studies, with those in distance education and limited-residency programs reporting feeling isolated from their institutions, programs, and fellow students, especially at the dissertation or final project stage of their program. The 2015 Doctoral Initiative on Minority Attrition and Completion survey reported 45% of doctoral candidates responding that they frequently or occasionally felt isolated from other students with 32% of pre-candidates feeling the same (Allen, 2014; Berry, 2017; Dupont et al., 2013; Greene, 2015; Pancheri et al., 2013; Sowell, Allum, & Okahana, 2015; Stracke & Kumar, 2014; Terrell et al., 2012). Such feelings of isolation can be contributing factors to lack of persistence and attrition from doctoral programs (Allen, 2014; Berry, 2017; Dupont et al., 2013; Greene, 2015; Pancheri et al., 2013; Stracke & Kumar, 2014; Terrell et al., 2012).

Educational persistence and the completion of doctoral education are important issues to the nursing profession and nursing education as well. The 2011 Institute of Medicine (IOM) report, The Future of Nursing: Leading Change, Advancing Health, recommended the nursing profession increase the percentage of nurses with a bachelor's degree in nursing to 80%, and to double the number of nurses pursuing doctoral degrees in nursing by 2020 (Institute of Medicine, 2011). In 2016, U.S. nursing schools turned away over 64,000 qualified applicants from baccalaureate and
graduate nursing programs, with many nursing schools citing faculty shortages as a primary factor (American Association of Colleges of Nursing (AACN), 2017). Per the National League for Nursing (NLN), 35,200 more nurse faculty will be needed by 2022, and university-based colleges of nursing are encouraged to increase the number of doctoral-prepared nurse faculty (NLN, 2017). A 2017 report on faculty vacancies indicated a national nurse faculty vacancy rate of 7.9%, with 56% of colleges reporting needing full-time nursing faculty positions filled (AACN, 2017). Most of these vacancies (92.8%) are positions either requiring or preferring a doctoral degree in nursing, with the most significant issue affecting faculty recruitment reported to be the limited pool of doctoral-prepared nurse faculty (AACN, 2017). This shortage of doctoral-prepared nursing faculty highlights the demand for more doctoral-prepared nursing faculty as nursing programs expand and current faculty retire. There is also an increased demand for doctoral-prepared nurses for roles in advanced practice, leadership, and research in the United States. Both these demands indicate the need for educational institutions to identify factors affecting student persistence and to develop strategies to support doctoral nursing students with program persistence and degree completion in meeting the needs of the nursing profession.

The motivation for this evidence-based quality improvement project emerged from the primary investigator's conversations with fellow DNP students in a limited residency program and with the primary investigator's online students, with both groups expressing feelings of isolation and the desire to have ongoing contact with their fellow students. With the high rate of student attrition in doctoral programs, it is essential to identify factors affecting persistence, attrition, and success in doctoral study along with best practices and strategies to address them. Understanding these factors for Doctor of Nursing Practice (DNP) students in a limited-residency program and finding positive ways to address them is the underlying interest guiding this project.
Section 2: Problem Statement

The high number of doctoral students leaving their studies before completion of their degree is a concern to both students and educational institutions. Barriers to student persistence include the transition of DNP students from the role of course-taking students to that of independent work in the final project phase of their program, feelings of isolation from the program and their fellow students, along with feelings of being overwhelmed with increased anxiety and stress (Allen, 2014; Berry, 2017; Brown et al., 2016; Cardona, 2013; Deasy et al., 2014; Devos et al., 2017; Dupont et al., 2013, Galdino et al., 2016; Hlbase et al., 2016; Johnson, 2015; Silinda & Brubacher, 2016; Stallone, 2013; Volkert et al., 2018). Few studies were found addressing the effect of stress and social support on doctoral nursing students' intent to leave their educational programs, and further study is needed regarding the effect of these factors on student persistence along with the development of strategies to address the problem (Robinson & Volkert, 2018).

Project Purpose

The primary purpose of this evidence-based quality improvement project was to provide support to promote student well-being and educational program persistence for students in the final project stage of a small limited-residency DNP program through the provision of a virtual DNP Final Project Student Peer Support Community. This purpose will be addressed through the development of a virtual DNP Final Project Student Peer Support Community with an online discussion forum for peer social and final project support, and an online Final Project Resource Toolkit of academic support resources for student use.

Project Goal

The primary goal of this evidence-based quality improvement project is to promote DNP student well-being by increasing perception of peer connectedness, leading to a feeling of community with a reduction of perceived stress in the final project stage of a blended/hybrid limited-residency
DNP program. A secondary long-term goal is to promote educational program persistence through the use of these strategies. It is hoped that this project will assist in decreasing the perceived stress of the DNP final project students and improve persistence in the final project stage of the program. The project may also be able to serve as a pilot study for the expansion of these strategies to other university doctoral programs, and/or as an interdisciplinary program for the university in the future.

**Project Objectives**

The primary aim of the project is to determine the effect of the DNP Final Project Peer Support Community on students’ perception of isolation, perceived stress, and of peer community and connectedness regarding their DNP final project experience. A secondary aim of this project is to determine whether this intervention improves the quality of the student final project experience, with a long-term goal of improving student persistence in the final project phase of the limited-residency DNP program.

The primary process objectives of this evidence-based quality improvement project are:

1. To evaluate the use of the virtual DNP Final Project Peer Support Community on student perception of isolation, feelings of peer community, and connectedness after the 12-week intervention period.

2. To evaluate the use of the virtual DNP Final Project Peer Support Community on student perceived stress after the 12-week intervention period.
Section 3: Literature Review

The purpose of this literature review is to explore factors influencing attrition, persistence, and program progression of doctoral students, and to explore strategies utilized to promote student wellness, persistence and program progression for doctoral students, particularly at the dissertation or DNP final project phase of their education. Findings will assist in the identification of strategies that can be utilized to assist DNP students in a limited-residency program to increase student wellness, persistence, and completion of their education program.

Objectives for this literature review include:

1. To examine, analyze, and organize literature regarding factors influencing persistence, program progression, retention, and attrition of doctoral-level students.
2. To examine, analyze, and organize literature regarding best practices and strategies used to promote persistence and progression in doctoral studies especially at the dissertation or final project stage of doctoral or DNP education.

Search Criteria and Strategies

A comprehensive literature search was performed using the Cumulative Index to Nursing and Allied Health Literature database (CINAHL), EBSCO host, Google Scholar, ProQuest Nursing & Allied Health Source, ProQuest Psychology Journals, and PsyArticles, due to their coverage of nursing, health science, and psychosocial topics, with a focus on graduate and doctoral students.

Keywords used in the literature search included: doctoral student persistence and attrition, student persistence theories and models, graduate student academic stress, doctoral student transition, peer and social support, and DNP, blended, hybrid, limited-residency, online, and distance education. Literature was selected to meet the inclusion criteria of research conducted in the last 5-6 years, along with a few older pertinent studies, and included studies from various levels of evidence.
An internet search was also performed using Google search engine with websites chosen based on their internet domains ending in .gov, .edu, and .org, or inclusion of professional nursing or statistical information. Search results of literature and internet sources without access to full text and not written in English were excluded.

The literature search covered three main categories pertaining to doctoral student persistence and program progression, with a focus on distance education and limited-residency, blended/hybrid environments. These categories include; a) theories and models of student persistence, b) factors influencing doctoral student persistence and program progression, and c) best practices for doctoral student persistence and program progression.

The following questions were asked to guide the literature review:

1. What factors influence the persistence and program progression of doctoral students in traditional and online or limited-residency programs, particularly in the dissertation or final project stage of education?

2. What strategies and interventions have been found useful in promoting persistence and appropriate progression in doctoral studies in traditional and online or limited-residency programs, especially at the dissertation or final project stage of education?

**Synthesis of Relevant Literature**

**Theories and models of student persistence.**

Student persistence is defined as the measure of student progress from the beginning of their academic program until the completion of the program, without a break in study (Tinto, 1993), and is essential for student progression through the educational process. Tinto discusses the relationship of student persistence to student background, goals, and educational commitment, and the need for academic and social integration with the university and interactions with faculty and peers. He also describes how students in the final stage of doctoral education face barriers above and beyond those
found in completing their coursework (Tinto, 1993; 2016). Tinto's (1998) persistence theory proposes that "the more academically and socially involved individuals are – that is, the more they interact with other students and faculty - the more likely they are to persist" (p. 168). Tinto recommends promoting a sense of belonging for students using cohort programs and student social support via student networks or organizations to promote student educational persistence (Tinto, 1993; 2016).

Additional research focusing on student persistence in doctoral study found that dissertation preparation experiences and beginning work on the research topic with advisors early in the program increased academic motivation. The use of encouragement and support from fellow students, along with the use of mentors from both inside and outside the university, assisted students with dissertation self-efficacy (Varney, 2010). Human factors related to program culture, faculty-student relationships, and peer support and encouragement in the dissertation process were also found to have a more significant influence on doctoral persistence and success than individual factors (Stallone, 2013).

Bean and Metzner's persistence model for non-traditional students focuses on how social integration affects persistence and attrition of non-traditional students by looking at academic outcomes and their relation to external psychological and environmental factors. Non-traditional students tend to have less interaction with faculty and peers and are less likely to be influenced by the social environment of the institution. External factors such as employment and financial status, family responsibilities, and external support systems were found to have a more significant influence on academic persistence or attrition of non-traditional students (Bean & Metzner, 1985).

**Factors affecting doctoral student persistence and program.**

With doctoral completion rates ranging from 40% to 60% worldwide (Council of Graduate Schools, 2010; 2018), doctoral student persistence and attrition is an ongoing concern of universities, doctoral programs, and doctoral students. Understanding the various factors affecting doctoral
student persistence and program progression is vital to be able to support and assist students in completing their program goals.

**Non-traditional students and educational programs.**

Most research on doctoral persistence has been conducted with traditional in-person doctoral programs and traditional full-time students. In recent years, higher education has been moving towards increased use of non-traditional distance learning models such as online and limited-residency blended or hybrid models. Such non-traditional education models propose unique challenges for students and have been found to have 10-20% higher attrition rates than traditional programs (Kennedy et al., 2015; Terrell et al., 2012).

Several studies have investigated factors influencing attrition and persistence of non-traditional students. A recent nationwide descriptive survey found program issues, student/faculty advisor issues, the isolating/overwhelming nature of the dissertation or final capstone project, and support issues, as predictors of intent to leave doctoral study for DNP and Ph.D. non-traditional nursing students in online and hybrid doctoral programs (Volkert et al., 2018). Additional reasons for non-traditional doctoral students leaving their study include the level of interaction between students and their dissertation chair and committees, the need for mentorship, and lack of interaction with their peers for support (Terrell et al., 2012). Inadequate dissertation support from the beginning of the program, the need for a more structured dissertation process with administrative support and follow up, and the need for social and peer support were also found as factors affecting the persistence of non-traditional students (Kennedy et al., 2015).

**Intrinsic and extrinsic factors.**

Intrinsic factors such as engagement, self-efficacy, motivation, resilience, and self-regulated learning have also been found to affect doctoral program persistence and completion. Fifty-seven percent of doctoral students in one study reported disengaging experiences such as feelings of loss of
control of their research and isolation from the academic community, with engaging experiences reported by 43% of students including feelings of belonging in the academic community and developing an understanding of their research (Vekkila, Pyhalto & Lonka, 2014). Academic, cohort, peer, and personal support, along with student engagement, were found to influence student motivation to persist in doctoral studies (Cardona, 2013). Self-efficacy, resilience, and self-regulated learning have also been found essential in student educational persistence, along with the need for competence, autonomy, and relatedness. In an integrative review, resilience was found to be a protective factor with the use of optimism, hope, self-efficacy, and supportive social relationships (Andrusyszyn, Iwasiw, Forchuk, and Babenko-Mould, 2015). Resilience can modify students' ways of coping with stressors leading to adaptation and can be used as a basis for strategies for persistence and success in education (Reyes et al., 2015). Self-regulated learning strategies were also found to predict the time of dissertation completion when controlling for variables of financial and social support, the field of study, research self-efficacy, and gender (Kelley & Salisbury-Glennon, 2016).

Extrinsic factors such as academic stress and the role of support systems have also been found to contribute to doctoral study persistence and on-time program completion in the final stage of the doctoral program. Stress has long been of interest to psychologists and is one of the most investigated concepts in the field of psychology, with extensive literature regarding college student stress at all levels. The ability to effectively manage and cope with stress is strongly associated with doctoral student persistence. Students receiving funding reported lower levels of stress with social integration with faculty and student peers being an essential factor in doctoral persistence, especially in the dissertation stage of education to counteract the isolation experienced (Spaulding & Rockinson-Szapkiw, 2012).

A nationwide survey of doctoral nursing students found several sources of academic stress in nursing doctoral study, especially for non-traditional students. These stressors included returning to
school after an extended period with the need to re-develop study and writing skills, feeling overwhelmed by the demands of doctoral study, a lack of understanding of the process for the dissertation or DNP Final Project, and faculty and advisor barriers (Hlabse et al., 2016; Silinda & Brubacher, 2016). Doctoral students have also indicated increased academic stress regarding doctoral level writing and perception of a lack of preparation and lack of proper writing skills for writing a quality dissertation or final project and for professional publication (Jalongo, Boyer, & Ebbeck, 2013; Locke & Boyle, 2016), along with non-traditional students indicating a lack of time for dissertation writing and work due to full-time employment along with feelings of isolation and a lack of belonging to the academic community (Locke & Boyle, 2016).

In 2018, a nationwide survey of 835 Ph.D. and DNP nursing students found two types of stress to be significant predictors of students' intention to withdraw from their doctoral programs; academic stress with the overwhelming nature of the dissertation or final project, and support issues related to relationships between students and faculty/advisors, along with needed support from family/friends and peers (Volkert et al., 2018). Doctoral student stress levels were found to be negatively correlated to students' sense of belonging in their program (Hlabse et al., 2016). Age, perceived peer and family support, and role conflict were found to have significant effects on final dissertation completion time (DuPont et al., 2013). Other barriers identified by students included balancing of their time and multiple responsibilities, lack of confidence in their abilities, and the cost of their education (Hlabse et al., 2016), with themes of lack of life balance, support, and feedback also noted (Silinda & Brubacher, 2016). Adequate sources of academic, financial, and social support are also significant influences on persistence and time needed to complete the doctoral degree (Abedi & Benkin, 1987; Reilly & Fitzpatrick, 2009); as cited in Hlabse et al., (2016); DuPont et al., 2013).
**Stages of doctoral education.**

The transition of doctoral students from being a consumer of knowledge in their doctoral courses to becoming an independent creator of knowledge in the dissertation and final project stage of doctoral education is a factor in attrition and persistence of doctoral students (Gardner, 2008). The individualized and isolated nature of the dissertation and final project stage of education, along with the greater responsibility and creativity needed, frustrates many students and is considered to be a factor in doctoral attrition (Council of Graduate Schools, 2004).

The doctoral education process has been defined in different stages, along with their effects on doctoral students. Initially, Beeler's framework of adjustment to graduate study divided the doctoral education process into four stages, with each stage contributing to the isolation and anxiety of the student (Ali & Kohun, 2007). In stage one, preadmission to enrollment, the student feels unsure of what to expect and has a lack of social integration. In stage two, the first year of the program, students are adjusting to the reality of doctoral-level coursework, and they may be confused regarding the psychological and social demands of graduate study. Stage three involves additional courses, a comprehensive exam for Ph.D. students, identification of a research topic and advisor, and preparation of the research proposal, which may cause anxiety regarding new skills needed for these tasks, as well as establishing a relationship with their research advisor. Stage four is the completion of the research and its defense involving additional new skills in the writing of the dissertation or final project and collaboration with the advisor (Ali & Kohun, 2007).

In later literature, researchers have used three stages instead of four to describe the doctoral education transition to becoming an independent scholar. Gardner (2008) describes these as 1) the transition to the role of a graduate student, 2) coursework and social integration with peers, faculty and research advisors, and 3) transition to the role of an independent scholar with the student’s research. In a meta-analytic review of research regarding doctoral student experience from 2000-
2015, Pifer and Baker (2016) described the three stages of doctoral education as knowledge consumption, knowledge creation, and knowledge enactment. The first year of doctoral study seen as knowledge consumption is a traditional instructor-led stage with students learning about their field and developing their identities as doctoral-level learners. In the second stage of knowledge creation, students complete their coursework and dissertation proposal and defense, with increasing independence and autonomy in their work. In the final stage of knowledge enactment, students implement and complete their research and write and defend their dissertation (Pifer & Baker, 2016). Challenges found in the three stages of doctoral education included lack of fit, academic challenges, and personal/family challenges (Pifer & Baker, 2016).

**Graduate student well-being.**

Evidence also supports the role of academic stress and burnout affecting student well-being, and subsequent persistence at the graduate level of education. Doctoral student well-being is a continually evolving balancing act between self and external forces, and an overemphasis on the academic growth of doctoral students at the expense of personal and emotional development can lead to negative consequences such as stress, anxiety, exhaustion, and burnout. Stressors of deadlines, limited time, finances, family, and relationship issues, along with motivation and lack of control issues, affect well-being as well (Schmidt & Hansson, 2018). Social support and peer relationships, self-care, planning, and time management are widely used methods of coping with these stressors (Schmidt & Hansson, 2018).

Additional research has also found anxiety, depression, and burnout in graduate students contributing to withdrawal from their study. A recent worldwide 2018 survey of 2,279 graduate, mostly Ph.D. students, in 26 countries and 234 academic institutions, found graduate students more than six times as likely to experience anxiety and depression as the general population with 41% of the respondents scoring high on anxiety measures and 39% scoring high on depression measures.
(Evans et al., 2018). A survey in 2012 of 669 doctoral students regarding problems encountered with doctoral study found 43% of students considered withdrawal from their program, with students considering withdrawal scoring higher on measures of stress, anxiety, and exhaustion, and significantly lower on measures of interest in their studies (Phyalto et al., 2012). Students in non-traditional online and hybrid graduate programs have been found to have additional unique stressors related to program structure and isolation from other students, contributing to anxiety and depression (Gazza & Hunker, 2014; Kennedy et al., 2015; Terrell et al., 2012).

Considerable research has also been done over the years regarding the well-being of nursing students in all levels of nursing education, with stress and anxiety levels of nursing students found to surpass levels reported by medical students, licensed nurses, other healthcare students, and the overall female population as a whole, with increased levels of stress and anxiety found in graduate students (Brown et al., 2016; Deasy et al., 2014; Evans, 2018; Galdino et al., 2016). Many nursing graduate students are non-traditional, older students returning to graduate study after variable periods of being out of school requiring a re-learning of study skills and current academic expectations. These students may also experience additional academic stressors due to educational program demands such as residency hours, practicum projects, and research and publication requirements (Hlabse et al., 2016; Kennedy et al., 2015; Terrell et al., 2012).

Moderate to high amounts of stress have been found in graduate nursing students with academic stressors including course and program workload, examinations, and academic writing ranking as the highest stressors (Brown et al., 2016; Deasy et al., 2014) and additional stressors of financial, life, and social pressures contributing to student distress (Deasy et al., 2014), along with high scores of emotional exhaustion, depersonalization, and reduced academic effectiveness leading to burnout (Galdino et al., 2016).
Program stressors and support issues were found to be significant predictors for nursing doctoral students leaving their educational programs (Volkert et al., 2018). Higher overall stress, decreased support from friends and peers, and more hours of occupational work contributed most to the intent to leave doctoral study in all stages of the educational program. Financial stress has also been reported as a consistent stressor for doctoral students, and the researchers described the need to provide supplemental funding and reduce the workload of these students (Volkert et al., 2018).

**Best Practices for Improving Doctoral Student Persistence and Program Progression**

The issues of doctoral student attrition and the lack of program persistence have been an ongoing concern of universities. Identification of effective strategies to assist doctoral learners with program persistence, especially at the dissertation or final project stage of their education, is essential to student retention and success at universities and doctoral programs worldwide.

**Program strategies.**

To address the problem of doctoral student attrition, the Graduate School of the University of Georgia created a theoretical framework called "The Four Conditions for Optimal Doctoral Completion" (Grasso, Barry & Valentine, 2007). This framework included a) addressing recruitment of students to be sure they understand the expectations and rigor of doctoral study, b) admitting only candidates with good chances for success and providing a comprehensive orientation, c) formation of effective professional relationships between faculty and students to provide the support necessary for success, and d) providing a community for students to support each other with common challenges and opportunities (Grasso et al., 2007). The framework was then utilized in research projects at three large state universities addressing doctoral completion rates and program practices. Results of these research projects indicated the need for proactive administrative actions including recruitment of the right types of candidates with consideration of program and research fit, the provision of accurate information regarding the doctoral study program, and the start of research decision-making early in
the educational process (Grasso et al., 2007). The quality of the faculty advisor-student relationship was found to be crucial, with mentoring relationships and regular and timely communication and feedback from faculty advisors increasing the likelihood of doctoral completion. The need for student peer support relationships and a sense of community along with the development of methods to promote student interaction and support were also found to be essential (Grasso et al., 2007).

The Ph.D. Completion Project, a seven-year grant-funded project, addressed intervention strategies created and used by 250 programs in 21 universities, 15 public and six private, to address doctoral completion rates and patterns of attrition. It addressed six areas for improvement in doctoral education including organizational strategies, improvement of student mentoring and advising, curriculum revision with streamlining of course sequencing and start on research earlier in the program, along with the provision of student writing assistance both early in the program and in the dissertation phase of study (Council of Graduate Schools, 2010). Strategies of pre-program and early research experiences, student attendance at research meetings, and provision of a catalog of research ideas and opportunities, along with facilitation of matching of research interests of advisors and students for the student research experience were used. Improvement in student peer social support was also addressed with the development of student support networks and graduate student organizations, the involvement of graduate students on committees, and the establishment of family and medical leave policies for graduate assistants (Council of Graduate Schools, 2010).

Faculty and advisor mentoring and support.

Concerns with student mentoring have also been noted in the literature, and strategies for faculty, advisor, and institutional mentoring, along with peer mentoring and support, have been researched and discussed. Some faculty best practices for assisting students with successful completion of their doctoral studies include the provision of high-quality, timely feedback given in developmental and supportive approach rather than as a critique, with focused feedback on writing
improvement, provision of continuous support and supportive mentoring to students, the pairing of new and experienced faculty, and development of sensitivity to cultural issues (Deshpande, 2017). Additional strategies include the importance of recognizing the struggle of online and hybrid education models in maintaining student contact and communication, the need for promotion of peer-to-peer facilitation, and the importance of faculty and peer relationships in positively supporting online and hybrid doctoral students in a social as well as an academic sense (Deshpande, 2017). An online virtual mentoring program in the first year of a doctoral program with three themes related to online virtual mentoring; confirmation of the mentoring role, building communities, and learning the role of a doctoral student was also found to be a viable and appropriate form of support for online and limited-residency doctoral students (Welch, 2017).

Program support and structure, advisor support/mentorship, research engagement, and peer/cohort support, along with faculty mentorship and support in the development of scholarly activities, have been found relevant to doctoral student persistence (Bagaka's, Bransteter, Rispinto, & Badillo, 2015). Perceived competence was found to be a significant contributor to doctoral study persistence, with perceived support by both faculty and dissertation advisors having an indirect effect on persistence by influencing perceived competence and autonomy, with the effect of support by the dissertation advisor being the most substantial influence (Litalien & Guay, 2015).

Student feelings of isolation and loneliness in their doctoral program along with a lack of needed support resources and inconsistency in faculty feedback have been found to be barriers to program persistence, along with the need for the project and research focus to be started earlier in the program with guidance on choosing a project topic (Johnson, 2015). The use of a team-based mentoring model with clinical staff mentors in agencies committed to facilitating DNP students in their final projects, faculty mentors monitoring student progression with their projects, and DNP
coursework in the program directly related to student final projects was found to promote student confidence and persistence (Newland, 2015).

Barriers to retention include motivation and self-efficacy, feelings of isolation, and the nature and design of the doctoral program, along with student confusion regarding program requirements, and persistence and time requirements (Brill, Balcanoff, Land, Gogarty, & Turner 2014). Mentoring strategies to address these barriers included faculty mentoring, mentoring students for publication, mentoring by content experts, and the importance of peer support and cohorts. Mentoring models included co-mentoring, cohort learning, telephonic mentoring, virtual mentoring, and training for faculty in effective mentorship. The use of teleconferencing for students in online and hybrid environments and the need for a quality online learning community where students can share concerns and successes to reduce feelings of isolation was also recommended (Brill et al., 2014).

**Program and curriculum modification.**

The evolving nature of the Doctor of Nursing Practice degree has resulted in various versions of DNP curriculums with revisions and modifications over the years. The DNP Essentials from the American Association of Colleges of Nursing (AACN) has been used as the basis for most DNP program curriculum, with recent revisions made based on the August 2015 White Paper posted by the ACCN regarding DNP programs (AACN, 2015). Guidelines from accrediting bodies such as the Commission on Collegiate Nursing Education (CCNE) and the Accreditation Commission for Education in Nursing (ACEN) are also utilized in program and curriculum development. Some revisions made to DNP program curriculums to address the DNP Essentials and better meet student needs to promote student persistence are reviewed here.

One of the earliest DNP programs in the U.S. offered recommendations from their experience preparing APRNs for initial certification in a limited-residency, mostly online program; identifying the need for the creation of a sense of student community and the incorporation of multimodal
teaching strategies to meet the needs of different learning styles, along with the identification of the need for writing resources to help students with academic writing (Carter et al., 2016). They also noted that DNP students did not have a background in research design and methods or the statistical analysis skills needed for completion of large-scale research projects requiring faculty committee review, IRB approval, site agreements, dissertation-like analysis, and project defense. This observation led to the decision to remove the large stand-alone final project from the curriculum and replace it with learning outcomes and smaller projects embedded into existing courses throughout the curriculum, providing both formative and summative evaluation of student scholarly achievement throughout the program (Carter et al., 2016). Another program revision in response to themes found in student focus groups included better course sequencing, the completion of clinical courses for BSN-DNP students before project immersion courses, and the provision of a flowchart to indicate key steps in the program and final project process, along with partnering the project advisor and student in the first year of the program and defining a project topic early in the program in order to align program coursework with it for a narrowing and deepening focus (Grossman, Kazer, Moriber, & Calderwood (2016).

A DNP program structure using the Iowa Model of Research in Practice (IMRP) was utilized by integrating the IMRP concepts into the core courses of the program, along with the implementation of pass/fail tutorials based on the steps of the IRMP (Lloyd, D'Errico, & Bristol, 2016). Project development courses began in the second quarter of the program and were taken concurrently with the program coursework, completing before the students' final DNP project course and the beginning of their projects. Portions of the DNP project were completed in the IRMP project development courses, with feedback and recommendations from faculty and peers included in project finalization in later final project courses. Students reported satisfaction with having a structure to
follow, the opportunity to work on their project throughout their program, and the ability to complete
their program on time (Lloyd et al., 2016).

Another DNP program improved their curriculum to assist students in evaluating systems of
care, models of evaluation, and defining their project topic with the development of five project-
oriented courses. Project Orientation taken in the first semester of study assisted students in
developing a project topic. Translational Frameworks was taken next and assisted students in
learning models, frameworks, and useful strategies for the translation of evidence in clinical and
leadership roles, and to identify theory related to their project topic. The third course of Project
Planning and Proposal Development taught students principles of strategic planning, program design,
implementation, and evaluation, along with budgeting and grant-writing skills, resulting in the
completion of their proposal. At the completion of the Project Planning and Proposal development
course, students submitted their proposal to their committee and the IRB for approval.
Implementation of the project was then completed in the final two project-oriented courses;
Implementation and Evaluation and Evaluation and Dissemination. In a one-year evaluation of these
changes to the DNP program, the School of Nursing found successful persistence and progression
through the capstone project by all students in the new courses, along with a reduction in student
anxiety and the maintenance of academic progression with the best use of faculty resources (Miley &
Reinisch, 2016).

**Doctoral student well-being.**

Doctoral student well-being is a concern of universities and doctoral programs. A
perspective of student success known as thriving in positive psychology has evolved from student
persistence theory and psychological well-being theory. Thriving considers both academic and
psychosocial factors focusing on function in three areas: academic engagement, interpersonal
relationships, and intrapersonal well-being. It views students holistically, focusing on well-being and
flourishing, and describes thriving students as academically engaged with high levels of emotional and social well-being (Schreiner, 2013). Research into student thriving began with undergraduate students, and in 2015 a dissertation study of masters and doctoral students found a psychological sense of community to be the most significant predictor of graduate student thriving, followed by family/friend support and a positive departmental climate (Petridis, 2015). Adequate support was found to increase doctoral engagement in studies with a lack of support and feedback associated with a higher risk of student burnout (Vekkaila, Virtanen, Taina, & Pyhältö, 2016).

The need for stress reduction in graduate nursing students has been established with recent research (Anderson-Johnson & McPherson, 2016; Deasy et al., 2014; Evans et al., 2018; Galdino et al., 2016). Techniques for the management of student stress and anxiety have been evaluated based on the theoretical rationale of the Lazarus and Folkman's Transactional Model of Stress, Appraisal, and Coping. Intervention strategies found most successful were those that combined reducing the amount or intensity of stressors along with improving stress management and coping skills, and interventions using reappraisal either alone or in combination with other methods such as social and peer support (Turner & McCarthy, 2015).

**Social and peer support.**

Social support as a stress mediator has been investigated in many areas, however has only recently been addressed regarding doctoral students. According to the stress-buffer hypothesis, social support can mediate stress at the stress appraisal or emotional response steps of the chain that cause stress (Cohen & Wills, 1985). Previous research has noted that the dissertation and final project stage of doctoral education is often perceived as isolating, and social isolation has been identified as a relevant factor associated with doctoral attrition (Jairam & Kahl, 2012). Support from faculty, program administration, and peers were frequently mentioned as both identified needs and the basis for interventions.
Communities of learning provide an opportunity for students to collaborate, pursue their academic goals, and receive social and academic support. The healthiest academic environment has been found to be when students felt they were members of the scholarly community (Pyhalto, Stubb, & Lonka, 2009). Three sources of social support were found necessary to doctoral students, that of academic peers, faculty, and family. Three distinct types of social support were found to be useful; emotional support, practical support, and professional support, with each source of support providing support unique to that group (Jairam & Kahl, 2012). Students have reported outside support systems vital in meeting doctoral program challenges and found support and encouragement from friends and other doctoral students to be the most beneficial to coping strategies (Byers et al., 2014). Students also need opportunities to learn with and from each other to reduce social isolation (Holmes, Trimble, and Morrison-Danner, 2014).

Social support has been identified as the main support category valued by students followed by academic and instrumental support, with support coming from families, academic peers, and faculty supervisors also a significant determinant of success in doctoral studies (Mantai & Dowling, 2015; Peltonen, Vekkaila, Rautio, Haverinen, & Pyhalto, 2017). The culture and structure of academia has also been perceived as a significant barrier to persistence, with the most frequently cited factor in persistence being the level of support received from faculty and supervisors within the program, and family, friends, and peers outside of the program (Greene, 2015). Doctoral students with insufficient social support profiles were found to be less satisfied with their faculty supervision, more likely to suffer exhaustion and cynicism, and more likely to drop out than students with more sufficient support profiles, with students working in a research group having more sufficient support profiles than those working alone (Peltonen et al., 2017).
Communities of practice and peer support groups.

Improved peer support can be facilitated through the formation of communities of practice (CoPs) or support groups for doctoral students either in person or virtually through online forums, and evidence indicates positive results with the use of peer networks as support interventions for doctoral students. Wenger’s theory of communities of practice was used in the development of regular opportunities for face-to-face and virtual discussions for Ph.D. students and met a need for emotional and academic support and reduced perceptions of isolation (Janson, Howard, and Schoenberger-Orgad, 2004). The establishment of virtual CoPs can help to mitigate the geographic and perceptual isolation of doctoral students, while also contributing to the social construction of knowledge (Janson et al., 2004).

A dissertation peer support group (PSG) was developed by Ph.D. nursing students with the goal of all the students completing their dissertations in 11 months and being able to graduate together. Topics discussed at monthly meetings included time management, data sampling and analysis, writing blocks, theoretical modeling, and the college of nursing’s dissertation policies and practices. A significantly shorter time to completion of the doctoral degree was found with each PSG member completing their dissertation in less than a year, and students without support groups taking more than two years to complete their dissertations (Pancheri et al., 2013).

Stracke and Kumar (2014) investigated the central role of peer support in student-centered experiential learning of the graduate attributes of communication, critical thinking, self-motivation, research organization, and teamwork with the use of peer support groups meeting regularly without a supervisor or faculty member. In their study, members of the three PSGs identified topics to cover in bi-weekly or monthly sessions including the students’ research, the research process, career skills, practical management of the research process including time management, networking, staying on task and use of research tools, along with social activities for bonding and collegial support. Results
indicated the top attributes fostered in the PSGs were communication, critical thinking, self-motivation, teamwork, and research and organization, and that PSGs are valuable tools for the development of graduate study attributes as well as for connection and peer support (Stracke & Kumar, 2014).

A "netnographic" approach described as the use of ethnography in a virtual setting was utilized to identify and examine the content, structure, peer-to-peer interaction, and benefits within doctoral students' virtual communities of practice (VCoPs) by Allen (2014). Students reported the creation of a VCoP enhanced social networking and camaraderie with other students that they did not have at their educational institutions and helped to combat the feelings of isolation, separation, frustration, and anxiety they were feeling in their studies. The VCoP created a 'safe haven' allowing students to form relationships with other students, build a sense of community, and provide peer-to-peer encouragement and learning (Allen, 2014).

The Doctoral Student Connectedness Scale (DSCS) developed by Terrell et al., (2009) was used to assess student-student and student-faculty perceptions of the connectedness of online students (Rockinson-Szapkiw, Heuvelman-Hutchinson, & Spaulding, 2014). The online students using web-based communication technology in interacting with peers outside of the classroom reported a stronger sense of connectedness and connection to their peers than those using email, phone calls, and text messaging (Rockinson-Szapkiw et al., 2014). The researchers concluded the type of medium used for communication influenced perception of connectedness more than the frequency of interaction, and that use of web-based connection tools can reduce the risk of student attrition by maintaining a connection to and a feeling of community with student peers (Rockinson-Szapkiw et al., 2014).

A sense of community has been found to be vital to online and hybrid doctoral students, with feelings of isolation being contributing factors to lack of progress and attrition in a study utilizing
video footage and message boards from six online courses and 20 interviews (Berry, 2017). Thematic analysis indicated students defined their learning community as an interactive and supportive social group where students could share professional advice and emotional support to collaborate in their degree studies, with online students reporting the provision of academic, social, and emotional support from their peers. Students reported feelings of connection and closeness within their cohorts and stated that although the cohort was important to a shared experience, more supportive relationships were formed informally through a connection to peers in small groups (Berry, 2017).

A student survey examining the role of community for support in doctoral learning using three theories; the zone of proximal development, communities of practice (CoP), and peer mentoring, found reasons for building a community included the need for assistance in several areas. These areas were finalizing coursework, submitting to conferences, passing written and oral preliminary examinations, and writing and defending proposals and dissertations, along with the need for socialization with other adult learners with peer advice on navigating the doctoral program (Cherrstrom et al., 2018). The researchers discussed the progression of students through the zone of proximal development with the building of a CoP and providing peer mentoring to each other, along with how students benefited from the scholarly discussion and multiple perspectives of their peers and recommended facilitation of the development of student CoPs to guide students through doctoral programs to encourage peer support and professional relationships (Cherrstrom et al., 2018).

**Summary of Current Evidence**

This literature review has demonstrated that doctoral student persistence and program progression, particularly in the dissertation and final project stage of education, is influenced by many different factors requiring universities to provide doctoral students with support and resources for completion of their studies. Multiple themes relating to doctoral student persistence have been discussed, including student persistence theory, non-traditional students and the effect of different
types of learning environments, the effect of intrinsic and extrinsic factors, graduate student well-being, and how stages of doctoral education influence doctoral persistence and program progression. The literature review has also described strategies and interventions that have been utilized by universities and in research studies to address doctoral persistence and program progression.

Student persistence theories have discussed the importance of program culture, social integration, and a sense of belonging, along with external psychological and environmental stressors and support needed for non-traditional students (Bean & Metzner, 1985; Stallone, 2011; Tinto, 1993; Varney, 2010). Non-traditional doctoral education models have been found to have 10-20% higher attrition rates than traditional programs and pose unique challenges for students, including the need for peer interaction and support (Gazza & Hunker, 2014; Kennedy et al., 2015; Terrell et al., 2012). Intrinsic factors of student engagement, self-efficacy, resilience, and use of self-regulated learning strategies have been found to influence student persistence and program completion, along with extrinsic factors such as academic stress, feelings of isolation, and the need for family, peer, and faculty support (Hlabse et al., 2016; Kelley & Salisbury-Glennon, 2016; Locke & Boyle, 2016; Reyes et al., 2015; Silinda & Brubacher, 2016; Vekkaila er al., 2014; Volkert et al., 2018).

Doctoral study has been described as occurring in various stages of progression, from students being course-takers to becoming independent scholars with each stage having distinct challenges (Ali & Kohun, 2007; Gardner, 2008; Pifer & Baker, 2016). Doctoral student well-being is also an essential consideration in persistence and program progression with increased academic stress, anxiety, and depression reported by graduate and doctoral students in moderate to high ranges, leading to burnout and a higher risk of program withdrawal (Brown et al., 2016; Deasy et al., 2014; Evans et al., 2018; Galdino et al., 2016; Phyalto et al., 2012; Volkert et al., 2018).

Various strategies have been employed to address these factors, including program recruitment and orientation strategies, structuring of dissertation and final project stages of education,
and support and resources for research and writing. Additional strategies include various methods of providing faculty and advisor mentoring and support, and curriculum changes including course sequencing, use of research models, early start of work on the DNP final project during the DNP program, and use of learning outcomes and projects embedded into the DNP program taking the place of the stand-alone final project (Bagaka's et al., 2015; Brill et al., 2014; Council of Graduate Schools, 2010; Deshpande, 2017; Grasso et al., 2007; Grossman et al., 2016; Jalongo et al., 2013; Litalien & Guay, 2015; Locke & Boyle, 2016; Lloyd et al., 2016; Miley & Reinisch, 2016; Welch, 2017). Improved social support for doctoral students, particularly in the dissertation or final project stage of their education and in distance education programs, is a recurring theme throughout this literature review with discussion of the need for the development of a sense of community with student peers for support and encouragement (DuPont et al., 2013; Gazza & Hunker, 2014; Kennedy et al., 2015; Terrell et al., 2012; Turner & McCarthy, 2017). Peer support has been found to be effective in reducing stress and promoting doctoral study persistence and timely program progression (Allen, 2014; Bagaka's et al., 2015; Berry, 2017; Brill et al., 2014; Council of Graduate Schools, 2010; Deshpande, 2017; Grasso, Barry, & Valentine, 2007; Greene, 2015; Pancheri et al., 2013; Petridis, 2015; Stracke & Kumar, 2014; Pifer & Baker, 2016, Stallone, 2003; Varney, 2010; Welch 2017). Strategies include the establishment of peer networks and opportunities for peer encouragement, support, and collaboration, along with the use of virtual communities of practice to support students in distance and limited-residency programs to develop a sense of community and decrease the sense of isolation felt in the dissertation or final project stage of doctoral study (Allen, 2014; Ames et al., 2018; Berry, 2017; Cherrstrom et al., 2018; Janson et al., 2004; Pancheri et al., 2013; Rockinson et al., 2014; Terrell, Snyder, & Dringus, 2012).

Results of this literature search yielded a collection of research articles with the majority published in 2012-2018 and the addition of a few earlier sources due to the pertinence of the
information provided and their having been referenced in more current articles. Research into doctoral student persistence was found from multiple countries, including some international studies. Using the Levels of Evidence Rating Scheme for Individual Studies by Oman, Duran, and Fink (2008), a few Level 1 integrative and systematic reviews were utilized, along with several Level 3 mixed-methods studies. Many studies in this review are Level 4 qualitative and descriptive studies, along with some case studies, and Level 5 reports of institutional experiences. The preponderance of qualitative and case study research found represents the exploratory nature of emerging research to understand underlying reasons and motivations affecting doctoral student persistence and attrition and insights into current strategies utilized to address it (Sylvia & Terhaar, 2018). The findings of this literature review support the need for intervention strategies to assist doctoral students with persistence and appropriate progression through their educational program allowing for degree completion. This project leader will be using evidence related to peer support and student communities of practice in the development of the intervention for this project.

**Definition of Terms**

*Community of Practice (CoP)* - a "learning partnership among people who find it useful to learn from and with each other about a particular domain. They use each other's experience of practice as a learning resource" (Wenger & Wenger-Trayner, 2015).

*Connectedness* – the state of being joined or linked, a feeling of belonging to or having an affinity with a particular person or group (Oxford Living Dictionary, 2019).

*Limited-residency program* – an educational program in which students are required to meet on campus for brief periods with the majority of their education conducted through web-based distance learning tools.
*Non-traditional student* – includes such factors as more than 30 years old, part-time study, married, divorced or widowed, with dependent children or parents, self-funded with a career outside of the program, increasingly diverse (Offerman, 2011)

*Peer support group (PSG)* - a group of postgraduate students meeting regularly without a supervisor or faculty member to discuss their research projects (Stracke & Kumar, 2014)

*Stress* - a feeling that people experience when they believe they are overloaded and have reached the point of not being able to continue to cope with the pressures they are experiencing (Lazarus & Folkman, 1984).

*Student Persistence* - the measure of student progress from the beginning of their academic program until the completion of the program, without a break in study (Tinto, 1993)

*Virtual Community of Practice (VCoP)* – a community of practice of like-minded individuals meeting virtually or online via social networking technology dedicated to learning and advancing knowledge (Allen, 2014)
**Section 4: Framework**

Various models and theories have been identified to guide this evidence-based quality improvement project. The FADE Quality Improvement Model and Rogers Diffusion of Innovation Theory will be utilized as quality improvement and change theories in the preparation of the project for implementation within the school of nursing and in the evaluation of the intervention. Elements of the Lazarus and Folkman Transactional Theory of Stress and Coping, the Stress-Buffering Hypothesis, the Doctoral Student Connectedness Theory, and Wenger's Community of Practice Theory serve as the guiding conceptual framework. These theories provide a comprehensive method of viewing stressors affecting DNP students, coping strategies, and the need for connectedness with other students with the use of a student community of practice.

**Quality Improvement Theory**

The FADE Quality Improvement (QI) Model was adapted from the PDSA/PDCA model to assist organizations with all types of performance and improvement problems. The FADE QI Model has been identified as an appropriate model for this project since it allows for planning, implementation, evaluation, and revision of the intervention as needed with four major steps, along with repeated use of the intervention, perhaps with other groups of doctoral students in the future.

The first step of Focus establishes the base for the other three steps by clearly defining and verifying the process to be improved, and by setting goals for further action (Wiseman & Kaprielian, 2005). For this project, the first step of Focus has been achieved with the identification of the problem of DNP student lack of persistence in the final project phase of the DNP program by the Director of Graduate Nursing Programs who expressed interest in investigating reasons for this problem and strategies to address it.

The second step of Analyze allows for the collection and analysis of data to establish a baseline, identify the root causes of the problem, and visualize paths to a possible solution (Wiseman
& Kaprielian, 2005). For this project, this second step of Analyze was addressed by the completion of a comprehensive literature review by the primary investigator regarding factors found to influence doctoral student persistence, attrition, and strategies utilized to address the problem.

Figure 1. FADE Quality Improvement Model Retrieved from http://patientsafetyed.duhs.duke.edu/module_a/methods/fade.html

In the third step of Develop, a potential solution to the problem is proposed, and an action plan to address the problem is developed based on data collected in Step 2 (Wiseman & Kaprielian, 2005). For this project, the third step of Develop was addressed by the proposal for this evidence-based quality improvement project based on information gathered from the literature review to establish a virtual DNP Final Project Peer Support Community with a discussion forum and online resources toolkit for students to provide peer interaction and support in their work on their DNP Final Project.

The fourth step of Execution and Evaluation is where the action plan developed is implemented, perhaps on a pilot basis, and outcomes evaluated with changes made if needed (Wiseman & Kaprielian, 2005). For this project, the fourth step of Execution and Evaluation took
place with the implementation of the virtual DNP Final Project Peer Support Community over a 6-
month period, with a twelve-week intervention period per participant, followed by an evaluation of
its effectiveness. Each major step of the FADE QI Model has sub-steps that lead to the completion of
the needed areas for the major step. The FADE process can also be repeated on an ongoing basis to
readdress the same issue or identify other issues needing addressing, as noted in the diagram of the
model (Figure 1).

Change Theory

Rogers' Diffusion of Innovation Theory has been chosen for this change project since the
integration of a virtual DNP Final Project Peer Support Community can represent a new
technological innovation to the school of nursing. Roger's Diffusion of Innovation Theory defines
diffusion as the how, the why, and the rate that new ideas and technology spread through a
population or social system, and how the newness of these ideas leads to a degree of uncertainty with
the diffusion (Rogers, 2010). The use of this theory provides a useful framework for the planning of
the virtual DNP Final Project Peer Support Community to assist in anticipating and planning for
challenges related to the project, and to provide a strategic plan for implementation of the change.

Rogers' Diffusion of Innovation Theory can be utilized at both individual and organizational
levels. At the individual level, the innovation-decision process of diffusion of innovation occurs in
five steps: knowledge, persuasion, decision, implementation, and confirmation (Rogers, 2010). The
dfive steps of the diffusion of innovation process can be utilized to determine which step students
involved with this project are currently at regarding the use of the virtual DNP Final Project Peer
Support Community, and determine whether strategies for knowledge, persuasion, decision,
implementation, or confirmation are most applicable.

The process of diffusion of innovation for organizations includes three phases: initiation,
decision, and implementation, with specific strategies in each stage of adoption of innovations
(Rogers, 2010). The first phase of initiation takes place with the organization considering the change, and in the matching step, it finds the best fit or solution for the organization. Obtaining administrative support and funding are part of this initiation phase, as are consideration of cost and feasibility, identification of benefits to the change with evidence-based research, and the creation of a project leadership team with input from key stakeholders (Doyle, Garrett, & Currie, 2014). For this project, the first phase of initiation took place with discussions between the primary investigator and the Director of Graduate Nursing Programs regarding the problem of DNP students’ lack of persistence in the final project phase of the program and with the Director of Academic Technology regarding the use of the Blackboard Learning Management system for the virtual DNP Final Project Peer Support Community, the review of literature for evidence-based research, and the development of the project proposal.

The final decision to implement the change or innovation is the second phase of decision-making (Doyle et al., 2014). For this project, the second phase of this model was addressed with the approval of this project proposal by the DNP Committee and the JU Institutional Review Board, allowing movement to the third phase of the model.

The third phase of implementation includes stages of redefining, clarifying, and routinizing. In the stage of redefining, the innovation is modified to fit the needs of the organization and includes addressing stakeholder concerns regarding the innovation and possibly development and use of incentives to promote the change (Doyle et al., 2014). In the clarifying stage, the innovation is gradually embedded in the organization by allowing time for the integration of the change with specific support as needed (Doyle et al., 2014). For this project, the third phase of implementation was conducted as the project was approved and the implementation plan agreed upon by the university stakeholders. Clarification occurred as the virtual DNP Final Project Peer Support Community was implemented and evaluated after the 12-week intervention period for each
participant. Comfort levels with technology were considered in this stage, and the primary investigator was available to answer participant questions and provide support in the use of the virtual DNP Final Project Peer Support Community.

The final phase of routinizing occurs when the innovation is fully integrated and incorporated into the organization and includes steps of formative and summative evaluation to ascertain the advantages and disadvantages of the innovation and its relevance to the organization (Doyle et al., 2014). Summative evaluations can be disseminated and shared with other educational institutions and through publication in this stage. This final stage occurs after the implementation and evaluation of the virtual DNP Final Project Peer Support Community and the final project defense, along with the school of nursing decision of whether it has been a useful and effective intervention to continue for future students.

![Figure 2. Roger’s Process of Diffusion of Innovation for this QI Project (Card, 2019)](image)

**Conceptual Framework**

Elements from multiple theories were used as a conceptual framework to guide the development of this evidence-based quality improvement plan. These theories provide a comprehensive method of viewing stressors affecting DNP students, coping strategies that can be utilized, the need for connectedness with other students, and the use of a student community of practice.
Transactional theory of stress and coping.

The Transactional Theory of Stress and Coping developed by Richard Lazarus in 1966 is a frequently used theory to understand the effects of stress and how an individual responds. This theory is based on the theory of cognitive appraisal with the level of stress perceived being dependent on two types of appraisal. Primary appraisal is the person’s appraisal or judgment of the situation and how threatening it is to the individual, with secondary appraisal being the assessment of their internal resources and ability to minimize, tolerate, or cope with the stress (Lazarus and Folkman, 1984).

In this transactional theory, coping is viewed as the person’s reaction to primary and secondary appraisal, and occurs when the secondary appraisal determines the demands of the stress or stressor exceed the person’s resources and functions to modify the level of emotional distress and to change the relationship of the person to the stress (Lazarus & Folkman, 1984). Two categories of coping responses can be utilized to address stress. Emotion-focused coping is used when a person feels they cannot handle the source of the stress, feels that it is out of their control, and tries to reduce the emotional distress associated with the stressful situation (Lazarus & Folkman, 1984). An example of emotion-focused coping can be found in the grief process, with the use of prayer, meditation, distraction, and food, alcohol, or drugs (McLeod, 2015). Problem-focused coping directs the effort at addressing the stressor or problem itself and seeks ways to reduce the effects of the stress on the person. Steps taken in problem-focused coping include identifying the problem, developing alternative solutions, learning new skills to deal with the stressor or problem, and re-appraising and finding new behavior to handle the stress (Lazarus & Folkman, 1984). Problem-focused coping strategies address the problem and its cause, can provide long-term solutions, and work best when the person can do something to control the source of the stress. They can include steps of seeking social support, time management, or problem-solving to address the root of the problem (McLeod, 2015).
This project focuses on the use of problem-focused coping with the use of the virtual DNP Final Project Peer Support Community for peer social support, group learning, and the provision of strategies to address problems and issues raised by the DNP Final Project experience.

**Stress-Buffering theory.**

The Stress-Buffering theory proposed in 1976 by Drs. John Cassel and Sidney Cobb correlates to the Transactional Theory of Stress and Coping by considering both the assessment of a potential threat and the ability to cope in determining a stressful event. This theory proposes that the existence of strong social ties and resources facilitates coping with stressful events appraised as threatening (Cohen & Wills, 1985). Research on the stress-buffering theory described the importance of the perceived availability of support along with the quality of the support; with the most effective support found to be informal social relationships rather than formal transactions playing a role at several points in the stress reaction chain of events (Cohen & Wills, 1985).

Social support is thought to attenuate or prevent stress appraisal and improve one’s perceived ability to cope with the stressful event corresponding to Lazarus and Folkman’s use of problem-focused coping. A person’s beliefs regarding support may also reduce the emotional response to a stressful event and prevent or alter behavioral responses, with social support alleviating the impact of...
the stressful event by altering the perceived impact of the problem or helping to facilitate a solution as noted in the diagram below (Cohen & Wills, 1985).

With the use of three different types of support; 1) social and emotional support of being cared for and valued, 2) informational support, and 3) material aid; the stress-support matching hypothesis suggests the potential benefit of support depends on the type of support found to be most effective for a specific type of stressful event. Evidence has suggested that social and emotional support appears to provide protection for a wide variety of stressful events, with other types of support being more specific to particular needs raised by stressful events (Cohen & Wills, 1985).

Figure 4. Stress Buffering Theory – (Cohen & Wills, 1985)

For this project, two types of stress-buffering support were proposed. Social support can be obtained through the peer support of the virtual DNP Final Project Peer Support Community and serve a stress-buffering purpose. The online resources toolkit can serve as informational support with the final project and stress management resources it provides.

Student Connectedness theory.

Terrell, Snyder, & Dringus (2009) defined connectedness as “the feeling of belonging and acceptance… the creation of bonding relationships with feelings of safety and trust…” (Terrell et al., 2009, p. 113), and noted challenges with the creation of this connectedness for students studying part-time or in distance education and limited-residency environments. The researchers developed
the Doctoral Student Connectedness Scale (DSCS) with two parts to measure student-to-faculty connectedness and student-to-student connectedness of doctoral students in a limited-residency program. The results of the use of this scale with 223 doctoral students in a limited-residency program found a limited sense of connectedness between students and faculty, with even lower levels of student-to-student connectedness noted to be due to difficulties in communicating regularly and easily with each other (Terrell et al., 2009).

Based on the findings of the DSCS, Terrell, Snyder, and Dringus (2012) developed a grounded theory of connectivity and persistence in a limited-residency doctoral program. The researchers investigated student-to-student communication in various stages of the doctoral dissertation phase of education, including student willingness to help one another, communication, development of virtual groups, and their experiences with other students. They also investigated student-to-faculty communication in four areas; faculty feedback, ease of communication with faculty, relationships with faculty, and dissertation support issues. Their study results led to the development of the grounded theory of connectivity and persistence with two interacting components; the interaction between students and their dissertation chair and committee regarding dissertation work, and the need for interaction with student peers representing a readily available support group (Terrell et al., 2012).

Figure 5. Conditional Matrix of the Grounded Student Connectedness Theory (Terrell et al., 2012)

Terrell et al. (2012) concluded that a need exists for the creation of tools to facilitate student-to-faculty and student-to-student online communication in a limited-residency program to increase
feelings of connectedness. A recommendation from this study for increasing student feelings of connectedness to other students was the establishment of a virtual student learning community for doctoral students to interact with each other and to provide collaborative learning experiences (Terrell et al., 2012). Elements of the Doctoral Student Connectedness Theory were utilized in this project to support the creation of the virtual DNP Final Project Peer Support Community as an avenue for students to connect and interact with each other for peer support and collaborative learning regarding their final project experience.

**Community of Practice theory**

The Community of Practice Theory developed by Jean Lave and Etienne Wenger in 1998, defines communities of practice as “a learning partnership among people who find it useful to learn from and with each other about a particular domain… using each other’s experience of practice as a learning resource” (Wenger & Wenger-Trayner, 2015). Communities of practice (CoP) share ideas, information, and experiences, help members to create and manage the knowledge they need, reach across organizational and geographic boundaries, are not limited by formal structures, exist in a variety of contexts, including the workplace, nonprofit organizations, and higher education, and can be easily developed and sustained in virtual environments (Cherrstrom et al., 2018; Wenger, 1998). Technology is often used to link people with similar practices and needs, to provide a shared repository of information resources for the community of practice, and to provide a platform for discussion among the community members (Hoadley, 2012). In higher education, CoP benefits include a connection with a shared context, dialogue to stimulate learning, diffusion of existing knowledge, generating new knowledge, and collaboration (Cherrstrom et al., 2018).

To be a community of practice, the group must include the following three crucial characteristics: an identity defined by a domain of shared interest with members’ commitment to the domain of interest, the sharing of information through discussions and activities, and group members helping each other
by sharing experiences, tools, and strategies for addressing issues of mutual interest (Wenger & Wenger-Trayner, 2015). Stages in the development of a community of practice include the first stage of potential where a network of people with similar needs and issues discover common ground and come together as a group to explore the needs and issues. This initial stage is followed by a stage of coalescing where group members engage with each other to establish trust and address these needs through mutual learning and support, and a stage of maturing where the community takes charge of its practice in addressing their mutual issues and needs. These stages are followed by the stage of stewardship in which the community gains a voice, sustains its energy, and welcomes new members in cycles. A final stage of transforming may also occur where the community has outlived its usefulness, and people move on by letting go, defining a legacy, and possibly staying in touch with each other (Wegner, 1998). Wenger’s Community Practice Theory is useful in understanding the formation and process of growth of a community of practice, along with how CoPs can help support people with common needs such as doctoral students in the final phase of their education.

Figure 6. Developing the Community of Practice (Veillette, 2012)

Cherrstrom et al., (2018), used Vygotsky’s (1986) Zone of Proximal Development Theory, defined as “the difference between what a person can achieve when acting alone and what the same person can accomplish when acting with support from someone else” (Lantolf, 2000, p. 17, as cited in Cherrstrom et al., 2018), along with Wenger’s Community of Practice Theory, to develop a
community of practice framework for doctoral students. This framework depicted how the use of a CoP can promote learning for the doctoral student from “what they can do now to what they need to be able to do” during the dissertation or final project phase of doctoral education (Cherrstrom et al., 2018). The study found that participants built a community for support and learning with peer mentoring, playing a significant role in thriving and progressing in an adult education program. Peer mentoring included roles of coordination and leadership of the CoP, orientation, and advising regarding the program, teaching and mentoring, role-modeling, socialization, and cheerleading to support group members.

Figure 7. Use of the Community of Practice in the Zone of Proximal Learning (Cherrstrom et al., 2018)

For this project, the Community of Practice and Zone of Proximal Development theories were utilized with the formation of the virtual DNP Final Project Peer Support Community as an avenue of peer support for the DNP students in the completion of their final projects. Using the Community discussion forum and Final Project Resources Toolkit, students could share information
and experiences to support their journey and each other through the final project stage of their DNP education.

**Conceptual Framework Summary**

Elements from each of the theories discussed above were utilized in the development of this evidence-based quality improvement project. The project focused on the use of problem-focused coping from the Transactional Model of Stress and Coping with the use of the virtual DNP Final Project Peer Support Community for peer social support, group learning, and the provision of strategies to address perceived stress from the DNP Final Project experience. Two types of support were utilized from the Stress-Buffering Theory, with social support obtained through the peer support of the virtual DNP Final Project Peer Support Community serving as a stress-buffer and the online resources toolkit serving as informational support with the final project and stress management resources provided. The Doctoral Student Connectedness and Community of Practice theories were utilized in this project to support the creation of the virtual DNP Final Project Peer Support Community as an avenue for students to connect and interact with each other for peer support and collaborative learning regarding their final project experience. Through the use of the online discussion forum and resources toolkit, students were able to share information and experiences as a community of practice to support their journey and each other through the final project stage of their DNP education.
Section 5: Project Description/Design

This evidence-based quality improvement project was designed to explore the effect of the provision of a virtual DNP Final Project Peer Support Community with an online discussion forum and online Final Project Resources Toolkit on student perception of isolation/student connectedness and feelings of perceived stress using a longitudinal, quasi-experimental design. Data were collected at two-time points: pre-intervention and post-intervention. A pre/post-test design with Likert-type surveys measuring perception of student connectedness and perceived stress was utilized, and questions regarding use and perception of the DNP Final Project Peer Community along with short answer questions regarding student experience with the DNP Final Project Peer Community were asked on a post-intervention evaluation survey.

Project Goal

The primary goal of this quality improvement project was to promote DNP student well-being by increasing the perception of connectedness and community for the DNP students with a reduction of perceived stress in the final project stage of a small limited-residency DNP program through the use of a virtual DNP Final Project Peer Support Community with an online Final Project Resources Toolkit. This project may also be able to serve as a pilot for the expansion of the strategy to other university doctoral programs or as an interdisciplinary program for the university in the future.

Project Objectives

The primary objectives of this quality improvement project were:

1. To evaluate the effect of the use of the virtual DNP Final Project Peer Support Community on student perception of isolation and peer community and connectedness after the 12-week intervention period using a pre and post-intervention administration of the Doctoral Student Connectedness Scale (DSCS).
2. To evaluate the effect of the use of the virtual DNP Final Project Peer Support Community on student perceived stress after the 12-week intervention period using a pre and post-intervention administration of the Perceived Stress Scale (PSS).

A secondary objective of this project was to evaluate if the use of the virtual DNP Final Project Peer Support Community improved the quality of the student final project experience.

**Project Site and Facility Support**

The setting chosen for this project was a private university with a School of Nursing offering Bachelor of Science in Nursing, RN-BSN Nursing, Master of Science in Nursing, and Doctor of Nursing Practice degrees. The virtual DNP Final Project Peer Support Community was conducted utilizing an online student organization within the Blackboard learning management system utilized in the limited-residency DNP program at the university. The DNP students are familiar with the use of this learning system after completing their courses in it, and the project leader is familiar with the use of online education platforms with the teaching of online nursing courses since 2000. The project leader obtained the support of the Director of Graduate Nursing Programs and the Director of Academic Technology at the university to work with the DNP students utilizing a virtual student organization in the Blackboard Learning Management system.

**Population and Recruitment**

A convenience sample of currently registered DNP students consenting to participate in the project was used, with inclusion criteria being those students currently registered in the DNP final project courses in any stage of their final project work. Students were initially recruited for the project with emails (Appendix A) sent to DNP students identified by the School of Nursing as meeting the inclusion criteria and later by also placing an announcement in the Graduate Student bulletin board of the Blackboard learning management system at the university (Appendix L).
Privacy and Confidentiality

Each identified student participant was sent a recruitment email (Appendix A), given access to online information and a consent form (Appendix A) regarding the evidence-based quality improvement project details, and was required to consent electronically to participate in the project. In the case of any adverse effects or concerns from the pre or post-intervention assessments or the intervention, students were given contact information for the university student counseling center and national support hotlines. Project data was recorded using anonymous tracking IDs through the Qualtrics Survey software program from the university with all data stored on the secure drive accessible only to the project leader and her faculty chair. All information from the project was kept strictly confidential. Statistical analysis of project data took place through the upload of anonymous survey data to Intellectus statistical software, with data analysis conducted and results reported without the identification of project participants.

Intervention

The project intervention consisted of the provision of a virtual DNP Final Project Peer Support Community with an online discussion forum for peer support and an online Final Project Resources Toolkit over a 12-week intervention period per participant. The purpose of the online discussion forum was to be a self-directed community of practice allowing students to interact with each other for peer learning and support regarding their final projects. The online discussion forum provided students the opportunity to share successes and challenges with their final project, to seek and give peer support, and to collaborate with other students regarding the DNP final project process through the discussion of their concerns and final project tips, strategies, and resources. The discussion forum included provided discussion threads (Appendix J) for DNP Final Project common areas of concern, referencing the corresponding sections of the online Final Project Resources Toolkit (Appendix K). Student discussion was encouraged by the project leader with an introduction
thread asking students to introduce themselves and their projects, and encouraging them to post any questions or concerns they had for peer feedback using the provided discussion threads or by starting their own discussion threads in the peer support forum as needed. The project leader monitored the online discussion forum on at least three days per week during the intervention period but did not participate in the student discussions.

The online Final Project Resources Toolkit was available for student access and use at all times and included DNP final project support resources addressing project proposal and writing resources, writing for publication resources, research grant resources, and tips for persevering with and surviving their final projects. Discussion regarding the use of these resources was available in the online discussion forum in the provided discussion threads as needed by the students.

**Implementation Plan and Procedures**

This evidence-based quality improvement project focused on the evaluation of the use of the virtual DNP Final Project Peer Support Community in a graduate academic environment utilizing a student organization in the Blackboard Learning Management system. After students meeting the inclusion criteria completed the electronic informed consent to participate in the project, they were prompted to complete the DNP Final Project Peer Support Community Demographic Survey (Appendix D), the pre-intervention student connectedness section of the Doctoral Student Connectedness Scale (DSCS) (Appendix E), and the pre-intervention Perceived Stress Scale (PSS) (Appendix F) online.

Upon completion of the electronic consent and the pre-intervention surveys, the participating students were given access by the project leader to the virtual DNP Final Project Peer Support Community discussion forum and Final Project Resources Toolkit in the online Blackboard student organization. They were encouraged by the project leader to utilize the virtual DNP Final Project Peer Support Community discussion forum for peer support, to share successes and challenges with
their final project, and to collaborate with other students regarding the DNP final project process. They were also encouraged to utilize the online Final Project Resources Toolkit for final project support tips, strategies, and resources. The project leader sent emails to participating students periodically throughout the implementation period, encouraging them to utilize the virtual DNP Final Project Peer Support Community for resources and discussion of areas pertinent to their final project success. At the conclusion of their 12-week intervention period, participants were asked to reflect upon their experience and complete the post-intervention student section of the Doctoral Student Connectedness Scale (Appendix G), the post-intervention Perceived Stress Survey (Appendix H), and the DNP Final Project Peer Support Community and Resources Toolkit Evaluation Survey electronically (Appendix I). The project implementation plan is shown in Figure 8.

<table>
<thead>
<tr>
<th>Beginning Implementation</th>
<th>Peer Support Intervention</th>
<th>Ending Implementation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Administration of DNP Final Project Peer Support Community Informed Consent &amp; Demographic Survey</td>
<td>Access to the DNP Final Project Peer Support Community and online Final Project Resources Toolkit</td>
<td>Administration of post-intervention student questions of the Doctoral Student Connectedness Scale</td>
</tr>
<tr>
<td>Administration of the pre-intervention student questions of the Doctoral Student Connectedness Scale</td>
<td></td>
<td>Administration of the post-intervention Perceived Stress Scale</td>
</tr>
<tr>
<td>Administration of the post-intervention Perceived Stress Scale</td>
<td></td>
<td>Administration of the DNP Final Project Peer Support Community and Resources Toolkit Evaluation Survey</td>
</tr>
</tbody>
</table>

**Figure 8. Project Implementation Plan (Card, 2019)**

**Instruments/Measurement Tools**

All instruments used in this project were administered as online surveys through Qualtrics survey software. Demographic information was collected using a project leader-developed DNP Final Project Peer Support Community Demographic Survey (Appendix D), which collected baseline
characteristics of the student participants including gender, age, marital status, number of children both under age 13, and ages 13-18 in the home, employment status, DNP program type, program focus, and program stage.

Two instruments were utilized to measure pre and post-intervention student perceptions of student-to-student connectedness and perceived stress. Questions regarding student connectedness from the Doctoral Student Connectedness Scale (DSCS) developed in 2009 by Terrell, Snyder, and Dringus were utilized both pre and post-intervention to measure participants’ perceptions of connectedness with their fellow students. The DSCS was designed for identification of students at risk for withdrawal from their doctoral program as part of a grounded theory study whose results indicated that decreased feelings of student-to-student and student-to-faculty connectedness could predict withdrawal from the program, with the DSCS recommended to justify the need for program initiatives to encourage student persistence (Terrell et al., 2009). The authors developed the DSCS with statements adapted from Rovai’s 2002 Classroom Community Scale and the authors’ experiences with doctoral students. The DSCS questions related to student-student connectedness and student-faculty connectedness using a 5-point Likert-type scale were evaluated by subject-matter experts for content validity, and used in a survey of 223 doctoral students actively working on their dissertation. The authors reported that the KMO statistic (.920) and Bartlett’s test ($p=.000$) indicated the validity of the sample with the internal reliability of the instrument established with a Cronbach’s $\alpha$ score of .873 and a Spearman-Brown coefficient of 0.93 (Terrell et al., 2009).

This project utilized the student-student connectedness questions of the DSCS (Appendix E), with permission from the primary author for the use of this scale (Appendix C). The 7-item questionnaire used contains items related to student-student connectedness, with each item rated on a 5-point Likert-type scale of (1 = Strongly Disagree to 5 = Strongly Agree). The project leader administered the DSCS as an online survey, and therefore, interrater reliability was not needed.
The Perceived Stress Scale (PSS-10) developed by Cohen, Kamarck, and Mermelstein (1983) is a popular and widely used psychological instrument for the measurement of the perception of stress using a self-reported 5-point Likert-type scale and was utilized both pre and post-intervention to measure participants’ perceived stress with their final project. The PSS-10 was initially developed as a 14-item instrument in 1983 and shortened to a 10-item instrument in 1988 using factor analysis based on data gathered from 2,387 U.S. residents (Lee, 2012). Validation of the original 14-item scale was obtained from three samples, two groups of college students, and a group enrolled in a smoking cessation program with age found to be unrelated to PSS in all three samples. Cronbach’s alpha was found to be .84, .85, and .86 in each of the three samples, with test-retest reliability found to be adequate (Cohen et al., 1983). In a review of the literature of 19 articles regarding the psychometric evaluation of the PSS, Lee (2012) found the psychometric properties of the PSS-10 to be superior to those of the PSS-14, with internal consistency reliability established. The PSS-10 was found to have a Cronbach’s alpha score of > .70, ranging from .86 to .92 in reviewed studies, along with test-retest reliability of > .70 (Lee, 2012). The PSS-10 contains a set of general questions used to measure the degree to which situations are perceived as stressful, unpredictable, uncontrollable, and overloading during the previous month, and was designed for use in samples with at least a junior-high education. The 10-item questionnaire includes six negative items and four positive items, with each item rated based on experience in the past month on a 5-point Likert-type scale of (1 = never to 5 = very often) with higher scores indicating more significant stress (Cohen et al., 1983).

This project utilized the PSS-10 (Appendix F) to measure student perceived stress related to their DNP final project. Students were asked to answer the PSS-10 questions regarding their experiences with their DNP Final Project, both pre-intervention, and regarding their use of the virtual DNP Peer Support Final Project Community post-intervention. The author of the PSS-10 has stated that “Permission for the use of scales is not necessary when use is for nonprofit academic research or
nonprofit educational purposes” (Cohen, 2018) (Appendix C). The project leader administered the PSS-10 as an online survey, and therefore, interrater reliability was not needed.

A project leader-developed DNP Final Project Peer Support Community and Resources Toolkit Evaluation Survey (Appendix I) was utilized as a post-intervention satisfaction survey using questions regarding the frequency of student use of the virtual DNP Final Project Peer Support Community, and questions regarding student use of and satisfaction with the virtual DNP Final Project Peer Support Community on a 5-point Likert-type scale. Qualitative questions regarding student experience with the virtual DNP Final Project Peer Support Community were also included in the evaluation survey.

**Project Process and Timeline**

The proposal for this evidence-based quality improvement project was approved by the DNP Committee in July 2019 and by the university Institutional Review Board in October 2019. Implementation was conducted for a period of 26 weeks from November 22, 2019 to May 2, 2020, allowing each participant 12 weeks access to the DNP Final Project Peer Support Community based on their start date. Participants were recruited via email at the beginning of the project in November 2019 with an email sent out by the Graduate Nursing Adviser to eligible DNP students (Appendix A), and again in January 2020, along with the posting of a recruitment announcement (Appendix L) on the Graduate Nursing Student Blackboard. Students completed the online informed consent form at the beginning of the project (Appendix A). Upon receipt of the online consent form, students were electronically directed to the Demographic (Appendix D), the pre-intervention DSCS (Appendix E), and the PSS (Appendix F) surveys online. Upon completion of the informed consent, demographic survey, and pre-intervention surveys, participating students were given access to the virtual DNP Final Project Peer Support Community student organization in Blackboard by the project leader, and
encouraged via email to utilize the discussion forum for discussion and peer support along with the online Final Project Resources Toolkit.

After completion of each participant’s 12-week intervention period, students were asked to evaluate their experience with the DNP Final Project Peer Support Community and complete the post-intervention DSCS (Appendix G), the post-intervention PSS (Appendix H), and the DNP Final Project Peer Support Community Evaluation Survey (Appendix I). Data analysis took place one week following the completion of the 6-month implementation period on May 2, 2020 and was completed May 16, 2020.

Stakeholder Assessment

The high number of doctoral students leaving their studies before completion of their degree is a concern to both educational institutions and students. Several stakeholders expressed interest in strategies to improve the final project experience for DNP students. The Director of Graduate Nursing Programs at the university indicated a concern with DNP student persistence in the final project stage of the education program and asked for information regarding the problem and possible strategies to address it. The project leader met with the Director of Graduate Nursing Programs to describe the proposed quality improvement project, and obtained permission to proceed with the project at the university. In speaking informally with current DNP students, the project leader found students reporting feeling stressed with the independent nature of the final project stage of the program and feeling isolated from their fellow students. Several students expressed interest in the use of a support group for the DNP final project to improve the final project experience. The Director of the Academic Technology at the university also agreed to assist the project leader with the establishment of the virtual DNP Final Project Peer Support Community as a Blackboard student organization.
Financial Considerations

Minimal cost was involved in the implementation of this project since the project was conducted using the online Blackboard Learning Management system already in place at the university and was free to the student participants. Use of the Qualtrics survey program was also free from the university. Costs of the project included the purchase of an additional hard drive, memory, and network adapter to upgrade the project leader’s laptop computer at $550, and $60 for use of the Intellectus Statistics program. Additional costs may be incurred in the future for conference registration, possible travel, and lodging associated with professional dissemination of findings, and supplies for poster production. External submission of the quality improvement project proposal to the Lambda Rho At-Large Chapter of Sigma Theta Tau International Honor Society of Nursing resulted in the DNP project leader being selected as the 2018 Graduate Research Grant recipient to fund the costs of this project.

Ethical Considerations & Protection of Human Subjects

University Institutional Review Board (IRB) approval was obtained prior to initiating the DNP project with the official IRB Determination Form submitted immediately after proposal approval by the DNP Committee. This project protected human rights, with ethical principles of autonomy and confidentiality followed throughout the project, and minimal risk to participants. Each participant received details of the project and completed a fully disclosed informed consent (Appendix A) before participating. Participation in this evidence-based quality improvement project was voluntary, and participants were informed of the right to refuse to participate in any area of the project and the right to withdraw from the project at any time without consequences. The project leader was available via email or phone, beginning with the recruitment phase, at the time of informed consent, and throughout the entire project to answer any questions or concerns of the participants.
Participant confidentiality was of the utmost importance throughout the entire study. Although student participation in the virtual DNP Final Project Peer Support Community online discussion forum was not confidential from the other participating student members, the confidentiality of project data was strictly maintained with the use of anonymous student tracking numbers, and data analysis was completed anonymously. The project leader had sole access to the student identification information and maintained its confidentiality.

Permission was obtained from the Director of Graduate Nursing Programs of the university to conduct this quality improvement project utilizing a student-run organization in the online Blackboard learning management system. The project proposal was presented to the DNP Committee with approval received on July 19, 2019 and submitted to the IRB for Expedited Review with approval granted on October 31, 2019 (Appendix M).

**Sustainability**

Sustainability of an evidence-based quality improvement project needs to be included in the development and implementation process in order to continue the effects of innovation or change and can be accomplished by engaging stakeholders and by sharing results of the change. The high rate of attrition in doctoral programs in the US and across the world has become a concern to students and universities alike. As such, finding strategies to reduce attrition and promote student wellness and persistence is an important goal. The literature review demonstrated the positive effects of peer social support for doctoral students in the dissertation and final project phase of their education, and the evaluation survey for the virtual DNP Final Project Peer Support Community utilized in this project found it was a valuable and positive experience for the DNP student project participants. To maintain the virtual Peer Support Community for DNP students, the university could continue its use in the Blackboard student organization, give all DNP final project students access to it, and the School of Nursing could provide information regarding it in the student orientation to the final project courses.
Contents of the online Final Project Resources Toolkit would need to be updated periodically to check for broken links and updated information. It is hoped that with continued university support, the DNP students will continue with its use, making it a self-sustaining student community of practice.

Results of this evidence-based quality improvement project could also be communicated to key stakeholders in other doctoral programs and to the university administration for use in university student retention and persistence efforts, and the project could potentially be expanded to include other doctoral programs in the university. In addition to being expanded to other doctoral programs as initially designed, interdisciplinary virtual doctoral student community forums could also be implemented to allow for student discussion and learning across various disciplines as well as within individual disciplines.
Section 6: Evaluation

The primary goal of this quality improvement project was to promote DNP student well-being by increasing the perception of connectedness and community for the DNP students with a reduction of perceived stress in the final project stage of a blended, limited-residency DNP program through the use of a virtual DNP Final Project Peer Support Community.

At the conclusion of each participant’s 12-week access to the virtual DNP Final Project Peer Support Community, participants were asked to evaluate their experience with the DNP Final Project Peer Support Community by completing the post-intervention student section of Doctoral Student Connectedness Scale (Appendix G), the post-intervention Perceived Stress Scale (Appendix H), and DNP Final Project Peer Support Community and Resources Toolkit Evaluation Survey (Appendix I).

Measurements

Quantitative and qualitative data were used to measure outcomes of this quality improvement project post-implementation of the virtual DNP Final Project Peer Support Community with anonymous student tracking numbers used to maintain data anonymity. Demographic and pre and post-intervention variables were collected through the use of the DNP Final Project Peer Support Community Demographic Survey, the student questions on the DSCS, the PSS, and the DNP Final Project Peer Support Community and Resources Toolkit Evaluation Survey. Outcome variables are scores on the comparison of means of the answers to student questions of the post-intervention DSCS and PSS, with the variables and levels of measurement from these instruments including Likert-Scale questions, comparison of means of the total PSS scores, effect size measurements, and quantitative and qualitative information from the DNP Final Project Peer Support Community and Resources Toolkit Evaluation Survey.

The DNP Final Project Peer Support Community Demographic Survey was used to collect baseline characteristics of the student participants in the project. The student-student connectedness
questions of the DSCS were utilized to measure student perception of isolation, student-to-student connectedness, and student community using a 5-point Likert-type scale both before and after their use of the DNP Final Project peer Support Community. The PSS-10 was utilized to measure student perceived stress related to their DNP final project using a 5-point Likert-type scale both pre and post-intervention and regarding their use of the virtual DNP Peer Support Final Project Community.

The DNP Final Project Peer Support Community and Resources Toolkit Evaluation Survey gathered measures of the frequency of student use of the virtual DNP Final Project Peer Support Community, measures of student satisfaction with the virtual DNP Final Project Peer Support Community on a 5-point Likert-type scale, and qualitative responses regarding student experience with the virtual DNP Final Project Peer Support Community.

Data Stewardship

Proper data stewardship in management and storage of data is an important fiduciary responsibility to protect the data and the rights of the participants from which the data was obtained and to allow for effective and appropriate use of data while minimizing the risk of harm (Sylvia & Terhaar, 2018). The project leader utilized the password-protected Qualtrics survey program and Intellectus statistical analysis software to ensure appropriate collection and evaluation of the data throughout the project. Quantitative data from the project instruments was collected via the Qualtrics survey program and recorded on an Excel spreadsheet with participant data confidentiality maintained through the use of an anonymous tracking number as the only identifier and shared via the secure One Drive as needed for consultation purposes.

Data Analysis

The primary objectives addressed by this project were:

1. To evaluate the use of the virtual DNP Final Project Peer Support Community on student perception of isolation and peer community and connectedness after the 12-week intervention period
using a pre and post-intervention administration of the Doctoral Student Connectedness Scale (DSCS).

2. To evaluate the use of the virtual DNP Final Project Peer Support Community on student perceived stress after the 12-week intervention period using a pre- and post-intervention administration of the Perceived Stress Scale (PSS).

All pre and post-survey data were summarized using descriptive statistics and or frequency tables by evaluation period (pre- and post-) and across all evaluation periods when applicable. Two-tailed paired samples t-tests of the pre and post-survey data were used to test for statistical differences in normally distributed data, with two-tailed Wilcoxon signed-rank tests used to test statistical differences in data not normally distributed. Effect size provides a quantitative measure of the magnitude of the difference between groups or associations between variables and provides an assessment of the strength of findings (Bakker et al., 2019). The effect size was analyzed using Cohen’s $d$ for all DSCS and PSS questions and total PSS scores pre and post-intervention. Descriptive statistical techniques were used to describe the project sample population and the findings of the DNP Final Project Peer Support Community and Resources Toolkit Evaluation Survey. All statistical analysis was completed using $\alpha < .05$ or 95% confidence interval with Intellectus and JASP statistics software.
Section 7: Findings

Description of Project Sample

All students in the final project courses of the limited-residency DNP program were invited to participate, participation was voluntary, and participants signed an electronic informed consent form before being given access to the pre-intervention surveys and subsequently the DNP Final Project Peer Support Community. Privacy was maintained on all surveys by participants coding their surveys with the last four numbers of the cell phone number rather than their name. Recruitment emails were sent to a total of 46 DNP students meeting the inclusion criteria in two recruitment cycles, along with the posting of an announcement regarding the project on the online Graduate Student bulletin board. Due to the small population of DNP students the convenience sample was drawn from, a power analysis was not conducted. Ten DNP student participants completed the demographic and pre-intervention surveys for inclusion in the DNP Final Project Student Peer Support Community and seven participants completed the post-intervention and evaluation surveys resulting in a 21.7% acceptance rate and a 30% attrition rate.

Demographic Survey Results

The total number of project participants was ten. Of them, 9 (90%) were females, 1 (10%) was male, with 70% of the sample being married, 20% divorced, and 10% single. The most common age groups were 40-49 years (60%) and 50-59 years (20%), with 10% in each of the 30-39 years and 60 and over age groups. Most of the participants (70%) reported having no children under the age of 13 in the home, with 20% reporting one child and 10% reporting having three children under the age of 13. Most participants (80%) also reported have no children ages 13-18 in the home, with 10% reporting two children and 10% reporting one child between the ages of 13-18. Most participants (80%) reported working full-time, with 10% working part-time, and 10% reporting a combination of employment types (Qualtrics, May 2020).
The majority of participants (90%) were in the MSN-DNP program and 10% in the BSN-DNP program, with most participants (80%) being in the DNP Leadership program and the balance (20%) in the DNP APRN program. Participants were spread throughout the three stages of the DNP final project with most (50%) in the proposal development stage, 30% in the implementation stage, and 20% in the evaluation/dissemination stages of their DNP Final Projects (Qualtrics, May 2020).

The results of the demographic survey are presented in Table 1.

Table 1

Summary of Demographic Variables

<table>
<thead>
<tr>
<th>Variable</th>
<th>n</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>9</td>
<td>90.0</td>
</tr>
<tr>
<td>Male</td>
<td>1</td>
<td>10.0</td>
</tr>
<tr>
<td>Age</td>
<td></td>
<td></td>
</tr>
<tr>
<td>40-49</td>
<td>6</td>
<td>60.0</td>
</tr>
<tr>
<td>30-39</td>
<td>1</td>
<td>10.0</td>
</tr>
<tr>
<td>60 and over</td>
<td>1</td>
<td>10.0</td>
</tr>
<tr>
<td>50-59</td>
<td>2</td>
<td>20.0</td>
</tr>
<tr>
<td>Marital Status</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Married</td>
<td>7</td>
<td>70.0</td>
</tr>
<tr>
<td>Divorced</td>
<td>2</td>
<td>20.0</td>
</tr>
<tr>
<td>Single</td>
<td>1</td>
<td>10.0</td>
</tr>
<tr>
<td># children under age 13</td>
<td></td>
<td></td>
</tr>
<tr>
<td>0</td>
<td>7</td>
<td>70.0</td>
</tr>
<tr>
<td>1</td>
<td>2</td>
<td>20.0</td>
</tr>
<tr>
<td>3</td>
<td>1</td>
<td>10.0</td>
</tr>
<tr>
<td># of children age 13 to 18</td>
<td></td>
<td></td>
</tr>
<tr>
<td>0</td>
<td>8</td>
<td>80.0</td>
</tr>
<tr>
<td>2</td>
<td>1</td>
<td>10.0</td>
</tr>
<tr>
<td>1</td>
<td>1</td>
<td>10.0</td>
</tr>
<tr>
<td>Employment Status</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Full-time</td>
<td>8</td>
<td>80.0</td>
</tr>
<tr>
<td>Part-time</td>
<td>1</td>
<td>10.0</td>
</tr>
<tr>
<td>Combination</td>
<td>1</td>
<td>10.0</td>
</tr>
<tr>
<td>DNP Program Type</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MSN-DNP</td>
<td>9</td>
<td>90.0</td>
</tr>
<tr>
<td>BSN-DNP</td>
<td>1</td>
<td>10.0</td>
</tr>
</tbody>
</table>
DNP Program Focus

<table>
<thead>
<tr>
<th>Focus</th>
<th>N</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Leadership</td>
<td>8</td>
<td>80.0</td>
</tr>
<tr>
<td>APRN</td>
<td>2</td>
<td>20.0</td>
</tr>
</tbody>
</table>

Stage of DNP Project

<table>
<thead>
<tr>
<th>Stage</th>
<th>N</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Proposal Development</td>
<td>5</td>
<td>50.0</td>
</tr>
<tr>
<td>Implementation</td>
<td>3</td>
<td>30.0</td>
</tr>
<tr>
<td>Evaluation/Dissemination</td>
<td>2</td>
<td>20.0</td>
</tr>
</tbody>
</table>

N=10, % = 100 x (n/N)

Pre and Post-intervention Survey Results

Completion of the Doctoral Student Connectedness Scale (DSCS) and the Perceived Stress Scale (PSS) surveys were requested of the participants both pre and post-intervention. Post-intervention collection of the DSCS and PSS survey data was conducted after a total intervention period of six months, allowing each participant 12 weeks of participation in the DNP Final Project Peer Support Community based on their start date.

Project objective 1: Perception of student connectedness.

Objective 1 focused on evaluation of the use of the virtual DNP Final Project Peer Support Community on student perception of isolation, feelings of peer connectedness, and community both before and after the 12-week intervention period using the pre and post-intervention DSCS Survey.

Pre-intervention DSCS survey findings.

The DSCS pre-intervention survey asked participants to complete the survey considering their experience with their DNP Final Project thus far. The DSCS items used in this project consisted of seven items ranked on a 5-point Likert-type scale with option one indicating “strongly disagree,” and option five indicating “strongly agree, and higher scores reflecting a higher sense of connectedness. The highest mean scores found in the ten pre-intervention DSCS surveys reflected feelings of caring and trust between students ranged from 3.71 to 3.86. The lowest mean scores were found in items regarding students communicating regularly with other students, and feeling connected to other students working on their DNP Final Project and ranged from 2.43 to 2.71.
(Qualtrics, May 2020). Results of the pre-intervention DSCS ten survey submissions are presented in Table 2.

**Table 2**

*Summary of Pre-intervention Doctoral Student Connectedness Scale Survey*

<table>
<thead>
<tr>
<th>Variable</th>
<th>n(%)</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>I feel that students working on their DNP Final Project care about each other</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Strongly Disagree</td>
<td>0 (0.0)</td>
<td>4.00</td>
</tr>
<tr>
<td>Disagree</td>
<td>0 (0.0)</td>
<td></td>
</tr>
<tr>
<td>Neither Agree nor Disagree</td>
<td>2(20.0)</td>
<td></td>
</tr>
<tr>
<td>Agree</td>
<td>6(60.0)</td>
<td></td>
</tr>
<tr>
<td>Strongly Agree</td>
<td>2(20.0)</td>
<td></td>
</tr>
<tr>
<td>I feel connected to other students in the program working on their DNP Final Project</td>
<td></td>
<td>2.60</td>
</tr>
<tr>
<td>Strongly Disagree</td>
<td>1(10.0)</td>
<td></td>
</tr>
<tr>
<td>Disagree</td>
<td>3(30.0)</td>
<td></td>
</tr>
<tr>
<td>Neither Agree nor Disagree</td>
<td>2(20.0)</td>
<td></td>
</tr>
<tr>
<td>Agree</td>
<td>4(40.0)</td>
<td></td>
</tr>
<tr>
<td>Strongly Agree</td>
<td>0 (0.0)</td>
<td></td>
</tr>
<tr>
<td>I feel like I can communicate easily with other students about the DNP Final Project</td>
<td></td>
<td>3.40</td>
</tr>
<tr>
<td>Strongly Disagree</td>
<td>0 (0.0)</td>
<td></td>
</tr>
<tr>
<td>Disagree</td>
<td>1(10.0)</td>
<td></td>
</tr>
<tr>
<td>Neither Agree nor Disagree</td>
<td>4(40.0)</td>
<td></td>
</tr>
<tr>
<td>Agree</td>
<td>5(50.0)</td>
<td></td>
</tr>
<tr>
<td>Strongly Agree</td>
<td>0 (0.0)</td>
<td></td>
</tr>
<tr>
<td>I communicate regularly with other students working on their DNP Final Project</td>
<td></td>
<td>2.70</td>
</tr>
<tr>
<td>Strongly Disagree</td>
<td>2(20.0)</td>
<td></td>
</tr>
<tr>
<td>Disagree</td>
<td>2(20.0)</td>
<td></td>
</tr>
<tr>
<td>Neither Agree nor Disagree</td>
<td>5(50.0)</td>
<td></td>
</tr>
<tr>
<td>Agree</td>
<td>1(10.0)</td>
<td></td>
</tr>
<tr>
<td>Strongly Agree</td>
<td>0 (0.0)</td>
<td></td>
</tr>
<tr>
<td>I feel I can trust other students working on their DNP Final Project</td>
<td></td>
<td>3.70</td>
</tr>
<tr>
<td>Strongly Disagree</td>
<td>0 (0.0)</td>
<td></td>
</tr>
<tr>
<td>Disagree</td>
<td>1(10.0)</td>
<td></td>
</tr>
<tr>
<td>Neither Agree nor Disagree</td>
<td>2(20.0)</td>
<td></td>
</tr>
<tr>
<td>Agree</td>
<td>6(60.0)</td>
<td></td>
</tr>
<tr>
<td>Strongly Agree</td>
<td>1(10.0)</td>
<td></td>
</tr>
<tr>
<td>I feel a spirit of community with other students while working on my DNP Final Project</td>
<td></td>
<td>3.20</td>
</tr>
<tr>
<td>Strongly Disagree</td>
<td>1(10.0)</td>
<td></td>
</tr>
<tr>
<td>Disagree</td>
<td>1(10.0)</td>
<td></td>
</tr>
<tr>
<td>Neither Agree nor Disagree</td>
<td>3(30.0)</td>
<td></td>
</tr>
<tr>
<td>Agree</td>
<td>5(50.0)</td>
<td></td>
</tr>
<tr>
<td>Strongly Agree</td>
<td>0 (0.0)</td>
<td></td>
</tr>
</tbody>
</table>
I feel like I can rely on other students working on their DNP Final Project for support

<table>
<thead>
<tr>
<th>Rating</th>
<th>N</th>
<th>%</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strongly Disagree</td>
<td>1</td>
<td>10.0</td>
<td>3.10</td>
</tr>
<tr>
<td>Disagree</td>
<td>1</td>
<td>10.0</td>
<td></td>
</tr>
<tr>
<td>Neither Agree nor Disagree</td>
<td>4</td>
<td>40.0</td>
<td></td>
</tr>
<tr>
<td>Agree</td>
<td>4</td>
<td>40.0</td>
<td></td>
</tr>
<tr>
<td>Strongly Agree</td>
<td>0</td>
<td>0.0</td>
<td></td>
</tr>
</tbody>
</table>

N= 10. % = 100 x (n/N)

Post-intervention DSCS survey findings.

The DSCS post-intervention survey asked participants to complete the survey considering their experience with the DNP Final Project Peer Support Community. The student-student connectedness items of the DSCS used in this project consisted of the same seven items as the pre-intervention DSCS ranked on a 5-point Likert-type scale with option one indicating “strongly disagree” and option five indicating “strongly agree, with higher scores reflecting a higher sense of connectedness. The highest mean scores found in the seven post-intervention DSCS surveys reflected feelings of trust and caring between students and ranged from 4.00 to 4.14. Mean scores of 3.14 to 3.71 were found for the rest of the post-intervention DSCS questions. Results of the post-intervention DSCS for the seven survey submissions are presented in Table 3.

Table 3

Summary of Post-intervention Doctoral Student Connectedness Scale Survey

<table>
<thead>
<tr>
<th>Variable</th>
<th>n(%)</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>I feel that students working on their DNP Final Project care about each other</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Strongly Disagree</td>
<td>0</td>
<td>0.0</td>
</tr>
<tr>
<td>Disagree</td>
<td>0</td>
<td>0.0</td>
</tr>
<tr>
<td>Neither Agree nor Disagree</td>
<td>1</td>
<td>14.3</td>
</tr>
<tr>
<td>Agree</td>
<td>4</td>
<td>57.1</td>
</tr>
<tr>
<td>Strongly Agree</td>
<td>2</td>
<td>28.6</td>
</tr>
<tr>
<td>I feel connected to other students in the program working on their DNP Final Project</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Strongly Disagree</td>
<td>1</td>
<td>14.3</td>
</tr>
<tr>
<td>Disagree</td>
<td>3</td>
<td>42.9</td>
</tr>
<tr>
<td>Neither Agree nor Disagree</td>
<td>0</td>
<td>0.0</td>
</tr>
<tr>
<td>Agree</td>
<td>3</td>
<td>42.9</td>
</tr>
<tr>
<td>Strongly Agree</td>
<td>1</td>
<td>14.3</td>
</tr>
</tbody>
</table>
I feel like I can communicate easily with other students about the DNP Final Project

| Strongly Disagree | 0 (0.0) | 3.57 |
| Disagree          | 1 (14.3) |
| Neither Agree nor Disagree | 2 (28.6) |
| Agree             | 3 (42.9) |
| Strongly Agree    | 1 (14.3) |

I communicate regularly with other students working on their DNP Final Project

| Strongly Disagree | 0 (0.0) | 3.14 |
| Disagree          | 2 (28.6) |
| Neither Agree nor Disagree | 2 (28.6) |
| Agree             | 3 (42.9) |
| Strongly Agree    | 0 (0.0) |

I feel I can trust other students working on their DNP Final Project

| Strongly Disagree | 0 (0.0) | 4.00 |
| Disagree          | 0 (0.0) |
| Neither Agree nor Disagree | 2 (28.6) |
| Agree             | 3 (42.9) |
| Strongly Agree    | 2 (28.6) |

I feel a spirit of community with other students while working on my DNP Final Project

| Strongly Disagree | 1 (14.3) | 3.71 |
| Disagree          | 2 (28.6) |
| Neither Agree nor Disagree | 0 (0.0) |
| Agree             | 3 (42.9) |
| Strongly Agree    | 2 (28.6) |

I feel like I can rely on other students working on their DNP Final Project for support

| Strongly Disagree | 0 (0.0) | 3.57 |
| Disagree          | 1 (14.3) |
| Neither Agree nor Disagree | 2 (28.6) |
| Agree             | 3 (42.9) |
| Strongly Agree    | 1 (14.3) |

N= 7. % = 100 x (n/N), due to rounding errors, percentages may not equal 100%.

Project objective 2: Perception of perceived stress.

Objective 2 focused on evaluation of the use of the virtual DNP Final Project Peer Support Community on student perceived stress both before and after the 12-week intervention period.

Pre-intervention PSS survey findings.

The PSS pre-intervention survey asked participants to complete the survey considering their experience with their DNP Final Project thus far using a scale of 0 to 4. Mean scores for the positively stated items on the PSS regarding the ability to handle personal problems, feeling that things are going their way, the ability to control irritations, and feeling on top of things ranged from
1.00 to 1.29. Mean scores for the remaining negatively stated items of the PSS regarding stress, difficulties and irritations, anger, feelings of being upset, and inability to cope ranged from 1.43 to 2.43.

Per the PSS author, the total scoring of the PSS is based on rating each item of the PSS scale on a 5-point scale ranging from never (0) to almost always (4). The four positively worded items are reverse scored, and all item scores are then summed together, with higher total scores indicating more perceived stress. Scores up to 13 are considered low or average perceived stress, with scores ranging from 14-26 considered moderate perceived stress, and scores ranging from 27-40 considered high perceived stress (Cohen, 1994).

Using this scoring system with the total scores of the PSS scores from the pre-intervention PSS of the sample participants, the total mean score of 18.9 indicates a moderate amount of perceived stress for the project participants. Results of survey questions for the pre-intervention PSS in the ten survey submissions are presented in Table 4.

Table 4

<table>
<thead>
<tr>
<th>Variable</th>
<th>n(%)</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>In the last month, how often have you been upset because of something that happened unexpectedly?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Never</td>
<td>0 (0.0)</td>
<td>3.30</td>
</tr>
<tr>
<td>Almost Never</td>
<td>1 (10.0)</td>
<td></td>
</tr>
<tr>
<td>Sometimes</td>
<td>5 (50.0)</td>
<td></td>
</tr>
<tr>
<td>Fairly Often</td>
<td>4 (40.0)</td>
<td></td>
</tr>
<tr>
<td>Very Often</td>
<td>1 (10.0)</td>
<td></td>
</tr>
</tbody>
</table>

| In the last month, how often have you felt that you were unable to control the important things in your life? | | |
| Never | 1 (10.0) | 3.00 |
| Almost Never | 2 (20.0) | |
| Sometimes | 4 (40.0) | |
| Fairly Often | 2 (20.0) | |
| Very Often | 1 (10.0) | |

| In the last month, how often have you felt nervous and 'stressed' | | |
| Never | 0 (0.0) | 3.50 |
| Almost Never | 0 (0.0) | |
| Sometimes | 7 (70.0) | |
| Fairly Often | 1 (10.0) | |
| Very Often | 2 (20.0) | |
In the last month, how often have you felt confident about your ability to handle your personal problems?

<table>
<thead>
<tr>
<th>Frequency</th>
<th>Count</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Never</td>
<td>0</td>
<td>0.0</td>
</tr>
<tr>
<td>Almost Never</td>
<td>1</td>
<td>10.0</td>
</tr>
<tr>
<td>Sometimes</td>
<td>1</td>
<td>10.0</td>
</tr>
<tr>
<td>Fairly Often</td>
<td>6</td>
<td>60.0</td>
</tr>
<tr>
<td>Very Often</td>
<td>2</td>
<td>20.0</td>
</tr>
</tbody>
</table>

In the last month, how often have you felt that things were going your way?

<table>
<thead>
<tr>
<th>Frequency</th>
<th>Count</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Never</td>
<td>0</td>
<td>0.0</td>
</tr>
<tr>
<td>Almost Never</td>
<td>0</td>
<td>0.0</td>
</tr>
<tr>
<td>Sometimes</td>
<td>5</td>
<td>50.0</td>
</tr>
<tr>
<td>Fairly Often</td>
<td>4</td>
<td>40.0</td>
</tr>
<tr>
<td>Very Often</td>
<td>1</td>
<td>10.0</td>
</tr>
</tbody>
</table>

In the last month, how often have you found that you could not cope with all the things that you had to do?

<table>
<thead>
<tr>
<th>Frequency</th>
<th>Count</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Never</td>
<td>0</td>
<td>0.0</td>
</tr>
<tr>
<td>Almost Never</td>
<td>4</td>
<td>40.0</td>
</tr>
<tr>
<td>Sometimes</td>
<td>5</td>
<td>50.0</td>
</tr>
<tr>
<td>Fairly Often</td>
<td>1</td>
<td>10.0</td>
</tr>
<tr>
<td>Very Often</td>
<td>0</td>
<td>0.0</td>
</tr>
</tbody>
</table>

In the last month, how often have you been able to control irritations in your life?

<table>
<thead>
<tr>
<th>Frequency</th>
<th>Count</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Never</td>
<td>0</td>
<td>0.0</td>
</tr>
<tr>
<td>Almost Never</td>
<td>0</td>
<td>0.0</td>
</tr>
<tr>
<td>Sometimes</td>
<td>5</td>
<td>50.0</td>
</tr>
<tr>
<td>Fairly Often</td>
<td>4</td>
<td>40.0</td>
</tr>
<tr>
<td>Very Often</td>
<td>1</td>
<td>10.0</td>
</tr>
</tbody>
</table>

In the last month, how often have you felt that you were on top of things?

<table>
<thead>
<tr>
<th>Frequency</th>
<th>Count</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Never</td>
<td>0</td>
<td>0.0</td>
</tr>
<tr>
<td>Almost Never</td>
<td>1</td>
<td>10.0</td>
</tr>
<tr>
<td>Sometimes</td>
<td>2</td>
<td>20.0</td>
</tr>
<tr>
<td>Fairly Often</td>
<td>6</td>
<td>60.0</td>
</tr>
<tr>
<td>Very Often</td>
<td>1</td>
<td>10.0</td>
</tr>
</tbody>
</table>

In the last month, how often have you been angered because of things that were outside of your control?

<table>
<thead>
<tr>
<th>Frequency</th>
<th>Count</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Never</td>
<td>1</td>
<td>10.0</td>
</tr>
<tr>
<td>Almost Never</td>
<td>4</td>
<td>40.0</td>
</tr>
<tr>
<td>Sometimes</td>
<td>3</td>
<td>30.0</td>
</tr>
<tr>
<td>Fairly Often</td>
<td>2</td>
<td>20.0</td>
</tr>
<tr>
<td>Very Often</td>
<td>0</td>
<td>0.0</td>
</tr>
</tbody>
</table>

In the last month, how often have you felt difficulties were piling up so high that you could not overcome them?

<table>
<thead>
<tr>
<th>Frequency</th>
<th>Count</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Never</td>
<td>1</td>
<td>10.0</td>
</tr>
<tr>
<td>Almost Never</td>
<td>4</td>
<td>40.0</td>
</tr>
<tr>
<td>Sometimes</td>
<td>3</td>
<td>30.0</td>
</tr>
<tr>
<td>Fairly Often</td>
<td>1</td>
<td>10.0</td>
</tr>
<tr>
<td>Very Often</td>
<td>1</td>
<td>10.0</td>
</tr>
</tbody>
</table>

N= 10, % = 100 x (n/N).
**Post-intervention PSS survey findings.**

The PSS post-intervention survey asked participants to complete the same ten survey questions considering their experience with the DNP Final Project Peer Support Community. Mean scores for the positively stated items on the post-intervention PSS regarding the ability to handle personal problems, feeling that things are going their way, the ability to control irritations, and feeling on top of things ranged from 3.43 to 4.00. Mean scores for the remaining negatively stated items of the post-intervention PSS regarding stress, difficulties and irritations, anger, feelings of being upset, and inability to cope ranged from 2.14 to 3.29.

Using the same scoring system as used for the pre-intervention PSS, the total mean score of 15.8 on the post-intervention PSS indicates a moderate amount of perceived stress average for these project participants, which was a decrease from the total mean score of 18.9 on the pre-intervention PSS. Results of the post-intervention PSS in the seven survey submissions are presented in Table 5.

**Table 5**

*Summary of Post-intervention Perceived Stress Scale Survey (PSS-10)*

<table>
<thead>
<tr>
<th>Variable</th>
<th>n(%)</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>In the last month, how often have you been upset because of something that happened unexpectedly?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Never</td>
<td>0 (0.0)</td>
<td>3.29</td>
</tr>
<tr>
<td>Almost Never</td>
<td>1 (14.3)</td>
<td></td>
</tr>
<tr>
<td>Sometimes</td>
<td>4 (57.1)</td>
<td></td>
</tr>
<tr>
<td>Fairly Often</td>
<td>1 (14.3)</td>
<td></td>
</tr>
<tr>
<td>Very Often</td>
<td>1 (14.3)</td>
<td></td>
</tr>
<tr>
<td>In the last month, how often have you felt that you were unable to control the important things in your life?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Never</td>
<td>0 (0.0)</td>
<td>3.14</td>
</tr>
<tr>
<td>Almost Never</td>
<td>2 (28.6)</td>
<td></td>
</tr>
<tr>
<td>Sometimes</td>
<td>2 (28.6)</td>
<td></td>
</tr>
<tr>
<td>Fairly Often</td>
<td>3 (42.9)</td>
<td></td>
</tr>
<tr>
<td>Very Often</td>
<td>0 (0.0)</td>
<td></td>
</tr>
<tr>
<td>In the last month, how often have you felt nervous and 'stressed'?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Never</td>
<td>0 (0.0)</td>
<td>3.14</td>
</tr>
<tr>
<td>Almost Never</td>
<td>1 (14.3)</td>
<td></td>
</tr>
<tr>
<td>Sometimes</td>
<td>4 (57.1)</td>
<td></td>
</tr>
<tr>
<td>Fairly Often</td>
<td>2 (28.6)</td>
<td></td>
</tr>
<tr>
<td>Very Often</td>
<td>0 (0.0)</td>
<td></td>
</tr>
</tbody>
</table>
In the last month, how often have you felt confident about your ability to handle your personal problems?

<table>
<thead>
<tr>
<th>Feeling</th>
<th>Count (Percentage)</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Never</td>
<td>0 (0.0)</td>
<td>4.00</td>
</tr>
<tr>
<td>Almost Never</td>
<td>1 (14.3)</td>
<td></td>
</tr>
<tr>
<td>Sometimes</td>
<td>2 (28.6)</td>
<td></td>
</tr>
<tr>
<td>Fairly Often</td>
<td>3 (42.9)</td>
<td></td>
</tr>
<tr>
<td>Very Often</td>
<td>2 (28.6)</td>
<td></td>
</tr>
</tbody>
</table>

In the last month, how often have you felt that things were going your way?

<table>
<thead>
<tr>
<th>Feeling</th>
<th>Count (Percentage)</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Never</td>
<td>0 (0.0)</td>
<td>3.43</td>
</tr>
<tr>
<td>Almost Never</td>
<td>1 (14.3)</td>
<td></td>
</tr>
<tr>
<td>Sometimes</td>
<td>3 (42.9)</td>
<td></td>
</tr>
<tr>
<td>Fairly Often</td>
<td>2 (28.6)</td>
<td></td>
</tr>
<tr>
<td>Very Often</td>
<td>1 (14.3)</td>
<td></td>
</tr>
</tbody>
</table>

In the last month, how often have you found that you could not cope with all the things that you had to do?

<table>
<thead>
<tr>
<th>Feeling</th>
<th>Count (Percentage)</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Never</td>
<td>0 (0.0)</td>
<td>2.71</td>
</tr>
<tr>
<td>Almost Never</td>
<td>2 (28.6)</td>
<td></td>
</tr>
<tr>
<td>Sometimes</td>
<td>3 (42.9)</td>
<td></td>
</tr>
<tr>
<td>Fairly Often</td>
<td>0 (0.0)</td>
<td></td>
</tr>
<tr>
<td>Very Often</td>
<td>1 (14.3)</td>
<td></td>
</tr>
</tbody>
</table>

In the last month, how often have you been able to control irritations in your life?

<table>
<thead>
<tr>
<th>Feeling</th>
<th>Count (Percentage)</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Never</td>
<td>0 (0.0)</td>
<td>3.86</td>
</tr>
<tr>
<td>Almost Never</td>
<td>0 (0.0)</td>
<td></td>
</tr>
<tr>
<td>Sometimes</td>
<td>2 (28.6)</td>
<td></td>
</tr>
<tr>
<td>Fairly Often</td>
<td>4 (57.1)</td>
<td></td>
</tr>
<tr>
<td>Very Often</td>
<td>1 (14.3)</td>
<td></td>
</tr>
</tbody>
</table>

In the last month, how often have you felt that you were on top of things?

<table>
<thead>
<tr>
<th>Feeling</th>
<th>Count (Percentage)</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Never</td>
<td>0 (0.0)</td>
<td>3.71</td>
</tr>
<tr>
<td>Almost Never</td>
<td>0 (0.0)</td>
<td></td>
</tr>
<tr>
<td>Sometimes</td>
<td>4 (57.1)</td>
<td></td>
</tr>
<tr>
<td>Fairly Often</td>
<td>1 (14.3)</td>
<td></td>
</tr>
<tr>
<td>Very Often</td>
<td>2 (28.6)</td>
<td></td>
</tr>
</tbody>
</table>

In the last month, how often have you been angered because of things that were outside of your control?

<table>
<thead>
<tr>
<th>Feeling</th>
<th>Count (Percentage)</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Never</td>
<td>1 (14.3)</td>
<td>2.43</td>
</tr>
<tr>
<td>Almost Never</td>
<td>2 (28.6)</td>
<td></td>
</tr>
<tr>
<td>Sometimes</td>
<td>4 (57.1)</td>
<td></td>
</tr>
<tr>
<td>Fairly Often</td>
<td>0 (0.0)</td>
<td></td>
</tr>
<tr>
<td>Very Often</td>
<td>0 (0.0)</td>
<td></td>
</tr>
</tbody>
</table>

In the last month, how often have you felt difficulties were piling up so high that you could not overcome them?

<table>
<thead>
<tr>
<th>Feeling</th>
<th>Count (Percentage)</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Never</td>
<td>2 (28.6)</td>
<td>2.14</td>
</tr>
<tr>
<td>Almost Never</td>
<td>3 (42.9)</td>
<td></td>
</tr>
<tr>
<td>Sometimes</td>
<td>1 (14.3)</td>
<td></td>
</tr>
<tr>
<td>Fairly Often</td>
<td>1 (14.3)</td>
<td></td>
</tr>
<tr>
<td>Very Often</td>
<td>0 (0.0)</td>
<td></td>
</tr>
</tbody>
</table>

N= 7. % = 100 x (n/N), due to rounding errors, percentages may not equal 100%.
Evaluation of the Effect of the DNP Final Project Peer Support Community

Differences between pre and post-intervention DSCS and PSS survey individual question mean scores were analyzed using two-tailed paired t-tests to examine whether the difference of the pre-intervention survey mean scores and the post-intervention survey mean scores were significantly different from zero for normally distributed data. Wilcoxon signed-rank tests were used to compare means for data not normally distributed. The alpha level for all analyses was set at $\alpha < .05$ significance.

Analyzing effect size provides a quantitative measure of the magnitude of the difference between groups or the association between variables and provides an assessment of the strength and importance of the findings (Bakker et al., 2019). Due to the very small sample size in this project, the effect size of the difference in mean scores for all DSCS and PSS individual questions and total PSS mean scores were also analyzed with Cohen’s $d$ and a 95% confidence interval and interpreted using effect sizes of 0.2, 0.4, and 0.6 considered as small, medium, and large effects for education and psychology studies (Heroux, 2017).

**DSCS individual question mean score comparison findings.**

Mean scores of the individual questions on the pre and post-intervention DSCS were compared to address Project Objective 1 regarding evaluation of the effect of the use of the virtual DNP Final Project Peer Support Community on student perception of isolation, feelings of peer community and connectedness both before and after the 12-week intervention period.

A Shapiro-Wilk test was conducted to determine whether the differences in pre-intervention DSCS survey individual question mean scores and post-intervention DSCS survey individual question mean scores could have been produced by a normal distribution (Gray et al., 2017). All questions, except question 3, met the normality assumption. A two-tailed paired $t$-test was conducted for all questions excluding question 3, to examine whether there was a significant difference between
pre-intervention DSCS survey individual question mean scores and post-intervention DSCS survey individual question mean scores, and the effect size was calculated to determine the size of the difference. A two-tailed Wilcoxon signed-rank nonparametric test was conducted for question 3 to examine whether there was a significant difference between the pre-intervention DSCS survey individual question mean score and the post-intervention DSCS survey individual question mean score.

Results.

The results of the two-tailed paired samples t-test for questions 1-2 and 4-7 and the two-tailed Wilcoxon signed-rank test for question 3 were not statistically significant for the DSCS individual question mean scores based on an $\alpha < .05$ significance level (Intellectus Statistics, 2020). These findings suggest the difference in the mean of pre-intervention DSCS survey individual question scores and the mean of post-intervention DSCS survey individual question scores were not significantly different from zero. Effect size using Cohen’s $d$ for standardized two-group mean differences at a 95% confidence interval interpreted with the ranges noted for education and psychology indicated a medium effect size for question 1 referring to feeling that students working on their DNP Final Project care about each other. The analysis results are presented in Table 6.

Table 6

<table>
<thead>
<tr>
<th>Instrument Item</th>
<th>Pre-intervention</th>
<th>Post-intervention</th>
<th>t</th>
<th>p</th>
<th>d</th>
</tr>
</thead>
<tbody>
<tr>
<td>I feel that students working on their DNP Final Project care about each other</td>
<td>3.86 0.69</td>
<td>4.14 0.69</td>
<td>-1.00</td>
<td>.356</td>
<td>0.378</td>
</tr>
<tr>
<td>I feel connected to other students in the program working on their DNP Final Project</td>
<td>2.71 1.11</td>
<td>3.29 1.25</td>
<td>-1.082</td>
<td>.321</td>
<td>-0.409</td>
</tr>
<tr>
<td>I feel like I can communicate easily with other students about the DNP Final Project</td>
<td>3.57 0.53</td>
<td>3.57 0.98</td>
<td>3.00*</td>
<td>1.00*</td>
<td>0.00*</td>
</tr>
</tbody>
</table>
I communicate regularly with other students working on their DNP Final Project | 2.43 | 1.13 | 3.14 | 0.90 | -1.18 | .283 | -0.45
I feel I can trust other students working on their DNP Final Project | 3.71 | 0.95 | 4.00 | 0.82 | -0.603 | .569 | -0.228
I feel a spirit of community with other students while working on my DNP Final Project | 3.00 | 1.06 | 3.71 | 1.25 | -0.956 | .376 | -0.361
I feel like I can rely on other students working on their DNP Final Project for support | 3.29 | 1.11 | 3.57 | 0.98 | -0.444 | .673 | -0.168

N = 7. Degrees of Freedom for the t-statistic = 6. p < 0.5. d represents Cohen's d, * represents values of Wilcoxon signed rank test (Intellectus Statistics, 2020)

**PSS individual question mean score comparison findings.**

Mean scores of the individual questions on the pre and post-intervention PSS were compared to address Project Objective 2 regarding evaluation of the effect of the use of the virtual DNP Final Project Peer Support Community on student perceived stress both before and after the 12-week intervention period.

A Shapiro-Wilk test was conducted to determine whether the differences in pre-intervention PSS survey individual question mean scores and post-intervention PSS individual question mean scores could have been produced by a normal distribution (Gray et al., 2017). Questions 4, 5, and 6 did not meet the normality assumption. A two-tailed paired t-test was conducted for questions meeting the normality assumption, to examine whether there was a significant difference between pre-intervention DSCS survey individual question mean scores and post-intervention DSCS survey individual question mean scores, and the effect size was calculated to determine the size of the difference. A two-tailed Wilcoxon signed-rank nonparametric test was conducted to examine whether there was a significant difference for questions 4, 5, and 6 between pre-intervention PSS survey individual question mean scores and post-intervention PSS survey individual question mean scores.
Results.

The results of the two-tailed paired samples t-tests for questions meeting the normality assumption and the Wilcoxon signed-rank tests for questions 4, 5, and 6 were not statistically significant based on an $\alpha < .05$ significance level. These findings suggest the difference in the pre-intervention PSS survey individual question mean scores and the post-intervention PSS survey individual question mean scores was not significantly different from zero (Intellectus Statistics, 2020). Effect size using Cohen’s $d$ for standardized two-group mean differences at a 95% confidence interval interpreted with ranges noted for education and psychology found a small effect size for questions 5, 8, and 10, and a medium effect size for question 3. The results are presented in Table 7.

Table 7

<table>
<thead>
<tr>
<th>Instrument Item</th>
<th>Pre-intervention $M$</th>
<th>Pre-intervention $SD$</th>
<th>Post-intervention $M$</th>
<th>Post-intervention $SD$</th>
<th>t</th>
<th>p</th>
<th>d</th>
</tr>
</thead>
<tbody>
<tr>
<td>In the last month, how often have you been upset because of something that happened unexpectedly?</td>
<td>2.14</td>
<td>0.69</td>
<td>2.29</td>
<td>0.95</td>
<td>-0.548</td>
<td>0.604</td>
<td>-0.207</td>
</tr>
<tr>
<td>In the last month, how often have you felt you were unable to control the important things in your life?</td>
<td>1.86</td>
<td>1.069</td>
<td>2.14</td>
<td>0.900</td>
<td>-0.505</td>
<td>0.631</td>
<td>-0.191</td>
</tr>
<tr>
<td>In the last month, how often have you felt nervous and stressed?</td>
<td>2.43</td>
<td>0.787</td>
<td>2.14</td>
<td>0.690</td>
<td>1.000</td>
<td>0.356</td>
<td>0.378</td>
</tr>
<tr>
<td>In the last month, how often have you felt confident about your ability to handle your personal problems?</td>
<td>3.00</td>
<td>1.00</td>
<td>3.00</td>
<td>0.816</td>
<td>3.00*</td>
<td>1.00*</td>
<td>0.00*</td>
</tr>
<tr>
<td>In the last month, how often have you felt that things were going your way?</td>
<td>2.71</td>
<td>0.756</td>
<td>2.57</td>
<td>1.134</td>
<td>2.00*</td>
<td>1.00*</td>
<td>0.333*</td>
</tr>
<tr>
<td>In the last month, how often have you felt you could not cope with all the things you had to do?</td>
<td>1.71</td>
<td>0.756</td>
<td>1.71</td>
<td>1.254</td>
<td>3.00*</td>
<td>1.00*</td>
<td>0.00*</td>
</tr>
<tr>
<td>In the last month, how often have you been able to control irritations in your life?</td>
<td>2.71</td>
<td>0.756</td>
<td>2.86</td>
<td>0.690</td>
<td>-0.548</td>
<td>0.604</td>
<td>-0.207</td>
</tr>
</tbody>
</table>
In the last month, how often have you felt you were on top of things?

<p>| | | | | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2.86</td>
<td>0.690</td>
<td>2.71</td>
<td>0.951</td>
<td>0.548</td>
<td>0.604</td>
</tr>
<tr>
<td></td>
<td>0.207</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

In the last month, how often have you been angered because of things outside of your control?

<p>| | | | | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1.43</td>
<td>0.976</td>
<td>1.43</td>
<td>0.787</td>
<td>0.00</td>
<td>1.00</td>
</tr>
<tr>
<td></td>
<td>1.00</td>
<td>0.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

In the last month, how often have you felt difficulties were piling up so high that you could not overcome them?

<p>| | | | | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1.43</td>
<td>0.976</td>
<td>1.14</td>
<td>1.069</td>
<td>0.679</td>
<td>.0522</td>
</tr>
<tr>
<td></td>
<td>0.257</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

N = 7. Degrees of Freedom for the t-statistic = 6. *p < 0.5. d represents Cohen’s, * represents values of Wilcoxon signed rank test. (Intellectus Statistics, 2020)

**PSS Total Score means comparison findings.**

A Shapiro-Wilk test was conducted to determine whether the differences in the PSS pre-intervention total mean scores and the PSS post-intervention total mean scores could have been produced by a normal distribution (Gray et al., 2017). The results of the Shapiro-Wilk test were not significant based on an α < .05 significance level indicating the normality assumption is met (Intellectus Statistics, 2020). A two-tailed paired samples t-test based on an α < .05 significance level was conducted to examine whether the difference of the PSS pre-intervention total mean score and the PSS post-intervention total mean score was significantly different from zero, and the effect size was calculated to determine the size of the difference.

**Results.**

The result of the two-tailed paired sample t-test was not significant based on an α < .05 significance level, suggesting that the difference in the PSS pre-intervention total mean score and the PSS post-intervention total mean score was not significantly different from zero (Intellectus Statistics, 2020). Effect size using Cohen’s d for standardized two-group mean differences at a 95% confidence interval interpreted with ranges noted for education and psychology found a negligible effect size for comparison of the mean total scores of the PSS. The results are presented in Table 8.
Table 8

Comparison of PSS Pre and Post-intervention Total Score Means

<table>
<thead>
<tr>
<th></th>
<th>Pre-Intervention</th>
<th>Post-Intervention</th>
<th>t</th>
<th>p</th>
<th>d</th>
</tr>
</thead>
<tbody>
<tr>
<td>M</td>
<td>15.71</td>
<td>15.86</td>
<td>-0.104</td>
<td>0.920</td>
<td>-0.039</td>
</tr>
<tr>
<td>SD</td>
<td>6.02</td>
<td>4.53</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

N = 7. Degrees of Freedom for the t-statistic = 6. p < 0.5. d represents Cohen’s d. (Intellectus Statistics, 2020)

DNP Final Project Peer Support Community Evaluation Survey Findings

The purpose of the DNP Final Project Peer Support Community Evaluation Survey was to measure the frequency of student use and student satisfaction with the virtual DNP Final Project Peer Support Community on a 5-point Likert-type scale, and to gather responses regarding student experience with the virtual DNP Final Project Peer Support Community. Analysis of the frequency of use and student satisfaction scores were summarized with descriptive statistics and qualitative statements on the DNP Final Project Peer Support Community Evaluation Survey were compiled.

The findings of the seven Evaluation survey submissions regarding the frequency of use and average time spent in the DNP Final Project Peer Support Community indicated that five participants accessed the DNP Final Project peer Support Community monthly or less than monthly, with two participants accessing it one to two times weekly. Time spent in the DNP Final Project Peer Support Community when using it was relatively evenly distributed between 0-10 minutes, 11-20 minutes, and 21-30 minutes. The results of survey questions regarding the frequency of use and time spent in the DNP Final Project Peer Support Community for the seven survey submissions are presented in Tables 9 and 10.

Table 9

Use of the DNP Final Project Peer Support Community and online Resources Toolkit

<table>
<thead>
<tr>
<th>Question</th>
<th>More than 3x weekly</th>
<th>1-2x weekly</th>
<th>Weekly</th>
<th>Bi-weekly</th>
<th>Monthly</th>
<th>Less than monthly</th>
</tr>
</thead>
<tbody>
<tr>
<td>How often did you use the DNP Final Project Peer Support Community?</td>
<td>0</td>
<td>2</td>
<td>0</td>
<td>0</td>
<td>2</td>
<td>3</td>
</tr>
</tbody>
</table>

N = 7.
**Table 10**

*Time spent in the DNP Final Project Peer Support Community*

<table>
<thead>
<tr>
<th>Question</th>
<th>More than 40 minutes</th>
<th>31-40 minutes</th>
<th>21-30 minutes</th>
<th>11-20 minutes</th>
<th>1-10 minutes</th>
</tr>
</thead>
<tbody>
<tr>
<td>How long on average did you stay in the DNP Final Project Peer Support Community when using it?</td>
<td>0</td>
<td>0</td>
<td>2</td>
<td>2</td>
<td>3</td>
</tr>
</tbody>
</table>

N = 7.

Regarding student satisfaction with use of the DNP Final Project Peer Support Community, students ranked their answers on a five-point scale of strongly agree to strongly disagree. Findings of the seven evaluation survey submissions regarding the usefulness of the Community, opportunity to connect with other DNP students, and value of participation in the DNP Final Project Peer Support Community indicated that 4 participants (57.1%) found the Final Project Resources Toolkit helpful to them, with 2 participants (28.6%) strongly agreeing, and 3 participants (42.9%) neither agreeing nor disagreeing. Two participants (28.6%) found the peer discussions in the DNP Final Project Peer Support Community helpful to them, with 5 participants (71.4%) neither agreeing nor disagreeing. More participants found the opportunity to connect with other DNP students working on their final projects helpful to them, with 4 participants (57.1%) agreeing and 3 participants (42.9%) neither agreeing nor disagreeing. The majority of participants found participation in the DNP Final Project Peer Support Community a positive experience, with 5 participants (71.4%) either agreeing or strongly agreeing, and 2 participants (28.6%) neither agreeing nor disagreeing. Results of the evaluation survey questions regarding usefulness, opportunity to connect with other DNP students, and the value of participation in the DNP Final Project Peer Support Community for the seven survey submissions are presented in Table 11.
Table 11

Satisfaction with the DNP Final Project Peer Support Community & Final Project Resources Toolkit

<table>
<thead>
<tr>
<th>Variable</th>
<th>n(%)</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>I found the Final Project Resources in the online Resources Toolkit of the DNP Final Project Peer Support Community helpful to me</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Strongly Disagree</td>
<td>0 (0.0)</td>
<td>3.86</td>
</tr>
<tr>
<td>Disagree</td>
<td>0 (0.0)</td>
<td></td>
</tr>
<tr>
<td>Neither Agree nor Disagree</td>
<td>3 (42.9)</td>
<td></td>
</tr>
<tr>
<td>Agree</td>
<td>2 (28.6)</td>
<td></td>
</tr>
<tr>
<td>Strongly Agree</td>
<td>2 (28.6)</td>
<td></td>
</tr>
<tr>
<td><strong>I found the discussions in the DNP Final Project Peer Support Community helpful to me</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Strongly Disagree</td>
<td>0 (0.0)</td>
<td>3.29</td>
</tr>
<tr>
<td>Disagree</td>
<td>0 (0.0)</td>
<td></td>
</tr>
<tr>
<td>Neither Agree nor Disagree</td>
<td>5 (71.4)</td>
<td></td>
</tr>
<tr>
<td>Agree</td>
<td>2 (28.6)</td>
<td></td>
</tr>
<tr>
<td>Strongly Agree</td>
<td>0 (0.0)</td>
<td></td>
</tr>
<tr>
<td><strong>I found the opportunity to connect with other DNP students working on their final projects helpful to me</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Strongly Disagree</td>
<td>0 (0.0)</td>
<td>3.57</td>
</tr>
<tr>
<td>Disagree</td>
<td>0 (0.0)</td>
<td></td>
</tr>
<tr>
<td>Neither Agree nor Disagree</td>
<td>3 (42.9)</td>
<td></td>
</tr>
<tr>
<td>Agree</td>
<td>4 (57.1)</td>
<td></td>
</tr>
<tr>
<td>Strongly Agree</td>
<td>0 (0.0)</td>
<td></td>
</tr>
<tr>
<td><strong>Overall, I would describe participation in the DNP Final Project Peer Support Community as a positive experience</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Strongly Disagree</td>
<td>0 (0.0)</td>
<td>3.86</td>
</tr>
<tr>
<td>Disagree</td>
<td>0 (0.0)</td>
<td></td>
</tr>
<tr>
<td>Neither Agree nor Disagree</td>
<td>2 (28.6)</td>
<td></td>
</tr>
<tr>
<td>Agree</td>
<td>4 (57.1)</td>
<td></td>
</tr>
<tr>
<td>Strongly Agree</td>
<td>1 (14.3)</td>
<td></td>
</tr>
</tbody>
</table>

N= 7, % = 100 x (n/N), Due to rounding errors, percentages may not equal 100%.

In answering the question of “What was the most helpful aspect of the DNP Final Project Peer Support Community,” participant responses included:

- Easy to access
- Having one location to ask questions and get feedback from fellow students
- The resources in the DNP Community are outstanding and extremely helpful
- Resources that students needed versus sifting through the vast and less than intuitive resources in Blackboard
In answering the question of what was the least helpful aspect of the DNP Final Project Peer Support Community, participants responses included:

- All helpful, many resources I already received from my professor
- I am sorry I couldn’t use it more, but I am at the end of my project and didn’t need the forum
- Needed more DNP students that were farther along in their projects
- Missed the social element of meeting in person

Additional comments and suggestions made by participants included:

- Great resource and highly recommend this venue.
- This is an exceptional resource and project!

**Project Results Summary**

Paired t-tests or Wilcoxon signed-rank tests as applicable of the DSCS and PSS individual questions mean scores were found to be statistically non-significant for all questions at \( \alpha < .05 \) and paired t-tests of the total PSS mean scores were also found to be statistically non-significant at \( \alpha < .05 \). These results are likely due to the minimal sample size.

A medium effect size was found for question 1 on the DSCS referring to feelings that DNP students working on their final project care about each other. This medium effect size may indicate a moderately important difference in the comparison of the pre and post-intervention mean scores for this DSCS question.

A small effect size was also found for questions, 5, 8, and 10 on the PSS, indicating unimportant differences between the pre and post-intervention mean scores for these questions. Medium effect sizes were found for question 3 on the PSS regarding feeling nervous and stressed. This medium effect size may indicate a moderately important difference in the comparison of the pre and post-intervention mean scores for this question on the PSS.
Finding Support

Evaluation survey findings for the DNP Final Project Peer Support Community were positive, with 57% of the respondents finding the Final Project Resources in the online Resources Toolkit helpful to them, 57% finding the opportunity to connect with other DNP students working on their final projects helpful to them, and 71% describing participation in the DNP Final Project Peer Support Community as a positive experience. Additional feedback regarding the most helpful aspects of the DNP Final Project Peer Support Community was positive, with comments made regarding ease of access, usefulness of the online Final Project Resources Toolkit, and the opportunity to connect with other DNP students working on their final projects for feedback. Feedback regarding the least helpful aspects of the DNP Final Project Peer Support Community indicates that earlier use of the community and participation by more DNP students may have been more useful. Observation of the participant discussion in the online discussion forum of the DNP Final Project Peer Support Community showed that participants did not use any of the provided discussion threads other than the Introductions thread, and appeared to prefer starting their own discussion threads.

Discussion

This project focused on DNP students in the final project stage of their education in a limited residency program in the United States. The purpose of this evidence-based quality improvement project was to provide support to promote student well-being by increasing the perception of connectedness and community for the DNP students with a reduction of perceived stress for DNP students in the final project stage of a limited-residency program. This is done through the provision of a virtual DNP Peer Support discussion forum with an online Final Project Resources Toolkit, and to evaluate the effect of the provision of this peer support community. Prior to this intervention, no organized initiative to provide peer support group or a final project toolkit was available to the DNP students.
DNP students in the independent final project stage of their education of this limited-residency program described participation in the virtual DNP Final Project Peer Support Community as a positive experience, with the majority reporting the Final Project Resources Toolkit and the opportunity to interact with other DNP students working on their final projects helpful to them. A single, organized, easy to access toolkit for final project resources was also reported to be useful and appreciated by the DNP student participants in this project. Benefits of peer social support including feelings of belonging with reduced feeling of isolation (Berry, 2017; Jairam & Kahl, 2012; Holmes et al., 2014), feelings of connection with social and emotional support (Schreiner, 2013; Petridis, 2015), opportunities for social networking and camaraderie (Allen, 2014), and improved stress mediation and coping skills (Cohen & Wills, 1985) are supported in the literature review. Based on the previously discussed positive relationship between a sense of connectedness and doctoral student persistence (Terrell et al., 2009; 2012), these findings can be useful to stakeholders in doctoral education in promoting student wellness, and hopefully educational persistence.

Literature suggests that a peer support community can be of value to doctoral students in the independent final stage of their education; thus, it may be helpful for doctoral students to seek opportunities to foster relationships with their peers earlier in their education through virtual technologies. These relationships can then be maintained and nurtured through virtual peer support systems throughout the independent final stage of doctoral education, where connectedness is needed most and essential to persistence (Rockinson-Szapkiw, 2012). Given the relationship between peer connectedness, support, and persistence (Bean & Metzner, 1985; Terrell et al., 2012; Tinto, 1993:2016), doctoral students committed to maintaining connections to other students during the independent stage of their education can reduce their risk of attrition by initiating and maintaining a sense of community with their peers through virtual interaction methods.
The primary project goals of reducing participant perception of isolation, increasing feelings of peer community and connectedness, and of reducing participant perceived stress were not directly supported by the non-significant relationship between the pre and post-intervention DSCS and PSS survey individual question mean scores and the PSS pre-intervention and post-intervention total mean scores. These were unexpected findings since it was anticipated that the use of the DNP Final Project Peer Support Community would increase the perception of connectedness and decrease perception of isolation and perceived stress. The findings regarding student satisfaction with the use of the virtual DNP Final Project Peer Support Community also did not entirely confirm previous studies of satisfaction with peer support for doctoral students discussed in the literature review. The secondary long-term goal to promote educational program persistence through the use of these strategies was unable to be evaluated at this time. However, positive findings from the project evaluation survey results suggest some benefit of the use of the DNP Final Project Peer Support Community for the project participants.

Effect size analysis indicated varying degrees of the strength of the relationships of some of the differences between the pre and post-intervention surveys. The medium effect size found for question 1 on the DSCS surveys could indicate a moderate difference in students feeling caring from one another after the use of the DNP Final Project Peer Support Community. The medium effect size found for questions 3 on the PSS surveys could indicate a moderate difference in participants’ feelings of being nervous and stressed after use of the DNP Final Project Peer Support Community. These relationships could be investigated further using a larger sample size.

The outcomes of this project could be explained by the very small sample size, and by pre-existing preferences since the desire for peer interaction and community vary. It is possible that participation in the DNP Final Project Peer Support Community and participant sense of connectedness was based on individual student preferences for peer interaction and sharing. Another
potential explanation for the project outcomes could be the complexity of factors involved in online social presence, described as “the subjective experience of being present with a ‘real’ person and having access to his or her thoughts and emotions” (Oh, Bailenson, Welch, 2018). Although social presence can be predictive of positive communication outcomes, virtual social presence is influenced by communication context and individual traits, along with being improved with visual representation such as a picture or avatar (Oh et al., 2018), which was not available in the text-based environment of the Blackboard student organization used in this project. Participant comfort level in developing community, feelings of trust, safety, and rapport with other DNP students while working independently or in a virtual manner may also have been a factor if they had not previously developed relationships with other students.

Recruitment for the project required amendment with an additional recruitment period in January 2020 to increase numbers from the initial November 2019 recruitment. The additional recruitment included the posting of an announcement on the online graduate nursing student bulletin board regarding the quality improvement project along with the resending of recruitment emails. In addition, the effects of the global COVID-19 pandemic occurring midway through this project could not be anticipated and may have affected participants’ stress levels and the attrition rate of the project.

This project equipped the DNP student project leader to lead the process of translating research into practice with the application of theoretical bases. The project illustrated the application of the Transactional Model of Stress and Coping and the Stress Buffering Theory in understanding student response to stress along with types and methods of stress support. It also illustrated how the Doctoral Student Connectedness Theory and Communities of Practice Theory could be utilized in the formation of peer support groups to assist nursing doctoral students in the final stage of their program of study. A virtual peer support and informational community can easily be set up and utilized by most universities through their online portals, or in private social media groups. This type of
community could be expanded to other doctoral programs, and allow stakeholders an opportunity to assess the effect of a virtual peer and informational support community for doctoral students.
Limitations and Barriers

Limitations to this QI project included a lack of diversity in the convenience sample in terms of gender and geographic location since the project was conducted for the benefit of DNP students in one small limited residency program only, reducing the generalizability to other doctoral student populations. The use of a convenience sample for this project also limits generalizability with the number of participants ($N = 10$) too small to yield statistically significant conclusions due to its limited strength and depth, and increasing the risk of Type II errors. This project used a single-group pre and post-intervention design with threats to internal validity including no use of a control group, history due to time between the pre and post surveys, maturation, and selection (Gray et al., 2017), and had an attrition rate of 30% between the pre and post-intervention surveys. The project utilized self-reporting measures that present an inherent risk to validity, and although this is often unavoidable in behavioral research, this risk of reporting bias needs to be acknowledged (Gray et al., 2017). While concerns regarding student perception of isolation, connectedness to other students, perceived stress, and their effect on program persistence and attrition also extend to other doctoral programs and countries as noted in the literature review for this project, the results and conclusions of this project should be taken with caution due to the limitations discussed above.

Some barriers to this project were found in the project recruitment and follow-up process possibly influencing the low response rate. Initial recruitment emails were sent to eligible students by the DNP program advisor just before the university winter break, and students may have been distracted by the holidays and semester break, necessitating additional recruitment emails to be sent in January 2020. The project leader also did not have access to the eligible students’ email addresses for recruitment follow-up, which would have been helpful. Although a recruitment announcement was posted to the online graduate nursing student bulletin board in January 2020, the project leader
could also have posted an announcement with the first recruitment attempt in November 2019.

Announcing the project and virtual DNP Final Project Peer Support Community at the student final project orientation on campus may have been helpful to project recruitment as well. Several students also appeared to have difficulty with the completion of the electronic informed consent form in order to be taken to the pre-intervention surveys, and the project leader had no way of identifying those students to assist them, so they were lost to the project. To conduct this project again, the project leader would make improvements to the recruitment process and the ability to follow up with eligible and interested students.

An additional potential barrier may be the use of a Blackboard student organization that required logging into the university system when the DNP students are no longer taking online classes and are working independently. A 2014 study of the use of technology for online doctoral student connectedness found students reporting a higher sense of connectedness when communicating with other students via social networking technology outside the classroom rather than in institutional sponsored support groups (Rockinson-Szapkiw et al., 2014). Students may have found the use of a private social media support group such as Facebook more engaging via phone technology and thus easier to integrate into their daily lives.

An unforeseen barrier to the implementation and evaluation of this project was the occurrence of the global COVID-19 pandemic of 2020 midway through the implementation of the project. Since the DNP students in this project are also working nurses, they may have become very busy with their work and family life due to the effects of the pandemic. This may have affected their participation in the DNP Final Project Peer Support Community and completion of the post-intervention surveys for the project. The global pandemic may also have contributed to increased stress for the participants and the attrition rate of the project.
Recommendations

This evidence-based quality improvement project was designed to evaluate the use of a virtual DNP Final Project Peer Support Community with an online Final Project Resource Toolkit for DNP students in the final project courses of a limited-residency DNP program. Participant evaluation reports of the use of the DNP Final Project Peer Support Community included favorable ratings. Participants found the resources in the online Final Project Resources Toolkit and the opportunity to connect with other DNP students helpful, and reported participation in the DNP Final Project Peer Support Community to be a beneficial experience in their final project work. The evaluation survey also included positive comments regarding ease of access, the usefulness of the online Final Project Resources Toolkit, and the opportunity to connect with other DNP students working on their final projects for feedback.

Based on these findings and the literature supporting the use of doctoral student peer support, the project leader recommends that the DNP Final Project Peer Support Community be continued at the university for the use of the DNP students in the final project stage of their education, either in the current Blackboard student organization or in a private social media group. It is also recommended that all students in the final project courses be granted access to it and that information regarding the use of the DNP Final Project Peer Support Community be given to the DNP students during the final project course orientation at the university each semester. Recommended changes to the online discussion forum to make it more inviting and approachable for students include the removal of the formal discussion threads, other than the Introduction thread, and encouraging the students to start their own discussions regarding topics they wish to discuss.

The establishment of doctoral student peer support communities in other subject fields, either via social media, Blackboard student organizations, or in person, to assist students in the final stage of doctoral study is also recommended. Previous research discussed in the literature review has
shown doctoral student peer support to have a substantial effect on student persistence and success, by allowing students to share information and experiences supporting their journey and each other through the final project stage of their doctoral education. This type of peer support may be useful to doctoral students and programs in other fields of study as well. An additional recommendation is the creation of a virtual university-wide doctoral peer support experience by including other doctoral students within the university for inter-disciplinary peer support during the final stage of doctoral study.

Further study of peer support is recommended in different types of doctoral programs, as well as perhaps initiating a peer support group earlier in the doctoral program to allow for relationship-building. Further research is also needed regarding virtual doctoral student peer support in limited residency and online programs with larger sample sizes. Due to the limited number of participants and timing of this project, the project leader recommends use of a limited enrollment period with recruitment at the beginning of a term to ensure all participants are participating in the peer community during the same intervention time. Future studies in larger universities are also recommended regarding the effect of a virtual peer support community for doctoral students in limited-residency, online, and in-person programs, and for research to examine the long-term effect of such support on student wellness and persistence in doctoral study.

**Dissemination Plan**

The findings of the project will be presented in a virtual public presentation at the university where the DNP project leader is enrolled. The DNP project leader will also report the findings to the Director of Graduate Studies, any other interested persons at the university where the project was conducted, and to Dr. Steve Terrell, author of the Doctoral Student Connectedness Scale. The DNP project leader will submit a manuscript suitable for publication to a peer-reviewed journal and will submit the final report or manuscript of this quality improvement project to the Virginia Henderson
Repository Global Nursing e-repository at Sigma Theta Tau International. The project leader was selected as the 2018 STTI Graduate Research Grant Recipient of the Sigma Theta Tau Lambda Rho At-Large Chapter, and a report of the project results can also be submitted to the chapter if they are interested.

**Conclusion**

Maintaining a peer support community in the independent final project or dissertation stage of doctoral education can be an effective strategy of providing support to doctoral students. Both social and informational support can be useful in promoting student well-being and in facilitating coping with stressful events as described in the Stress-Buffering Theory (Cohen & Wills, 1985). Formation of a doctoral student community of practice can play a significant role in providing an avenue for students to connect and interact with one another for peer support and collaborative learning regarding their final project or dissertation experience (Cherrstrom et al., 2018). The positive evaluation findings of this quality improvement project support the use of a virtual Peer Support Community with Final Project Resources Toolkit for doctoral students to seek and find support from other doctoral students in the final independent stage of doctoral education, as well as the provision of resources to assist them.
References


http://www.phdcompletion.org/information/Executive_Summary_Student_Success_Book_IV.pdf


https://doi.org/10.1038/nbt.4089


https://doi.org/10.1590/1982-0194201600014


https://doi.org/10.1016/j.nedt.2014.01.010


JASP Team (2020). *JASP* (Version 0.12.2) [Computer software].


Qualtrics [Computer software]. (2020). Provo, Utah


Rockinson-Szapkiw, A J 2012. Investigating uses and perceptions of online collaborative


https://doi.org/10.1080/17482631.2018.1508171


Silinda, F. T., & Brubacher, M. R. (2016). Distance learning postgraduate student stress while writing a dissertation or thesis. *Journal of Distance Education (Online), 31*(1), 1.


https://doi.org/10.28945/1589

Stallone, M. N. (2013). Factors associated with student attrition and retention in an educational leadership doctoral program. *Journal of College Teaching & Learning (TLC), 1*(6)
https://doi.org/10.19030/tlc.v1i6.1952

https://doi.org/10.1080/13562517.2014.901955


Center. Retrieved from

http://patientsafetyed.duhs.duke.edu/module_a/methods/methods.html
Appendix A – Recruitment Email and Informed Consent Document

Recruitment Email for Students

Subject: Opportunity and invitation to participate in a quality improvement project regarding student peer support for DNP students

My name is Pamela Simon Card, a doctoral candidate in the Doctor of Nursing Practice program at Jacksonville University. You are being contacted because you are currently enrolled in the DNP final project courses at Jacksonville University. To participate in this project regarding peer support, you will be asked to complete a demographic survey and two short pre-intervention surveys, to participate in the virtual DNP Peer Support Final Project Community, and to then complete two short post-intervention surveys and an evaluation form after participating in the virtual DNP Peer Support Final Project Community. The surveys will take about 5 to 10 minutes each to complete, and will collect your perceptions regarding student-student connectedness and perceived stress before and after participation in the virtual DNP Peer Support Final Project Community, as well as your participation and satisfaction with the virtual DNP Peer Support Final Project Community.

The surveys are set up to be anonymous – your name, IP address, or email will not be attached to your survey. The surveys will be tracked for pre and post-intervention data analysis with a non-identifying tracking ID. Additionally, your instructors will not know whether or not you decided to participate in the project.

Once the consent form is completed, you will be given links to the pre-intervention surveys, and when they are complete, you will be given access to the virtual DNP Peer Support Final Project Community.

Thank you for considering participating in this project!

Pamela Simon Card
pcard1@jacksonville.edu

IRB APPROVAL:
Project: 2019-056
Approved: October 31, 2019
Expiration: October 31, 2020
Summary of Project

**Title of the Project**: Finding Support: Use of a Virtual Student Community for DNP Students in a Limited-Residency Program

**Project Leader**: Pamela Simon Card, MSN, APRN, DNP candidate, Jacksonville University

**Faculty Advisor**: Dr. Pam Rillstone, Ph. D, Jacksonville University

You are invited to participate in a quality improvement project. In order to participate, you must be a DNP student enrolled in NUR 702 or NUR 740, the DNP Final Project courses, at Jacksonville University. Taking part in this quality improvement project is voluntary.

The purpose of the project is to evaluate the effect of the use of a student-run virtual DNP Final Project Peer Support Community with a peer support discussion form and online resources toolkit on the perception of student connectedness, sense of community, and perceived stress in the final project stage of the DNP program. The project leader would also like to determine your opinion on the use of the virtual DNP Final Project Peer Support Community and whether it was helpful to you.

If you agree to take part in this study, you will be asked to agree to (a) a non-disclosure statement and an informed consent form, (b) complete a demographic survey and 2 short pre-intervention surveys, and (c) participate in the DNP Final Project Peer Support Community in Blackboard for a period of 12 weeks or as long as you are enrolled in either NUR 702 or NUR 740 if it is less than 12 weeks. At the conclusion of the 12 weeks, or if you will no longer be taking NUR 702 or NUR 740, you will be asked to complete 2 short post-intervention surveys and an evaluation survey. The pre- and post-intervention surveys include questionnaires regarding your perception of connectedness to other DNP students in the DNP program at Jacksonville University and your perception of perceived stress both before and after the use of the DNP Final Project Peer Support Community. The study surveys should take 20-30 minutes in total to complete both before and after your use of the DNP Final Project Peer Support Community. Completion of the surveys will constitute implied consent for the use of your responses in the quality improvement project. Your data will not be linked to any data other than this quality improvement project.

There are some risks you might experience from being involved in this project. These can include anxiety, frustration with the use of the technology, or not benefiting from the use of the DNP Final Project Peer Support Community. Due to the nature of online discussion forums, participation in the online peer support discussion forum of the DNP Final Project Peer Support Community cannot be kept confidential from other study participants or the project leaders. There is also the possible loss of confidentiality of project data. To minimize the risks associated with being part of this project, the project leaders will request you to agree to a Non-Disclosure statement and that you respect the privacy of your fellow participants by maintaining high ethical standards of confidentiality and by not sharing any information outside of the DNP Final Project Peer Support Community. All study data will be protected using the last 4 digits of your cell phone number as anonymous tracking numbers, stored on the secure One Drive of the university with password protection, and project data will be shared anonymously for statistical analysis. Project results will be reported anonymously with no identifying information. These risks can be mitigated by the option of not participating in this quality improvement project.
You may benefit directly from being involved in this project by finding the discussion with fellow DNP students in the online peer support discussion forum and the final project resources toolkit helpful to you. Mental health and psychological support, if needed, is available at the Jacksonville University Counseling Center at 904-256-7180 or through an anonymous phone call to the National Alliance on Mental Illness Helpline: 1-800-950-NAMI (6264) or the National Suicide Prevention Lifeline: 1-800-273-TALK (8255).

If you decide to take part in this quality improvement project, it should be because you really want to volunteer. You will not lose any services, benefits, or rights you would normally have as a student if you choose not to volunteer. Nothing about your academic status or services will change no matter what you decide.

If you are interested in learning more about the project, please continue to read the informed consent below. If you are not interested, please stop here.

Thank You.
Informed Consent

TITLE OF THE QUALITY IMPROVEMENT PROJECT: Finding Support: Use of a Virtual Student Community for DNP Students in a Limited-Residency Program

PROJECT LEADERS:

Pamela Simon Card, MSN, APRN, DNP candidate, pcard1@jacksonville.edu, 904-891-7491 (24-hour cell phone number)

Dr. Pam Rillstone, Ph. D, APRN, Faculty Advisor, prillst@ju.edu, 904-610-2761
Jacksonville University, 2800 University Blvd. N., Jacksonville, FL 32211

PROJECT LEADER’S STATEMENT:
We are asking you to be part of a quality improvement project. The purpose of this consent letter is to give you the information you will need to help you decide whether to be involved in the project or not. Please read this form carefully. You may ask questions about the purpose of the quality improvement project, the possible risks and benefits, and anything else about the project or this form that is not clear. When we have answered all your questions, you can decide if you want to be involved in the project or not. This process is called “informed consent.” We will give you a copy of this form for your records.

THE PURPOSE OF THE PROJECT: is to evaluate the effect of the use of a student-run virtual DNP Final Project Peer Support Community with an online peer support discussion forum and final project resources toolkit on the perception of student connectedness, sense of community, and perceived stress in the final project stage of the DNP program. The project leaders would also like to determine your opinion on the use of the virtual DNP Final Project Peer Support Community and whether it was helpful to you.

PROCEDURES: (What is expected from the participant?):
You will be asked to agree to a non-disclosure statement and this informed consent form. Your name and Jacksonville University email address will be collected and used to give you access to the virtual DNP Final Project Final Peer Support Community in Blackboard, but will not be connected to your survey data or any other data in this project. Upon agreement to the non-disclosure statement and completion of this informed consent, you will be directed to and asked to complete a demographic survey and 2 short pre-intervention surveys. Upon completion of these surveys, you will be invited to participate in the online DNP Final Project Peer Support Community peer support Discussion Forum in Blackboard and to use the online Final Project Resources Toolkit for a period of 12 weeks, or as long as you are registered in NUR 702 or NUR 740 if it is less than 12 weeks. At the conclusion of
the 12 weeks, or if you will no longer be enrolled in NUR 702 or NUR 740, you will be given a link and asked to complete 2 short post-intervention surveys and an evaluation survey.

We expect your involvement in this quality improvement project will take approximately 12 weeks including the completion of the demographic survey, 2 short pre-intervention surveys, 2 short post-intervention surveys, and the evaluation survey.

The surveys should take 20-30 minutes in total to complete both before and after your participation in the DNP Final Project Peer Support Community. Your data will not be linked to any other data, and nothing about your academic status, your grades, or services as a student will change whether you decide to participate in the project or not. In addition, your faculty will not be informed of your participation in this project.

Approximately 75 DNP students are being invited to take part in this quality improvement project.

If you decide to participate in the quality improvement project, the investigators will use the name and Jacksonville University email address you provide in this consent form to give you access to the online DNP Final Project Peer Support Community, and collect the following information using the last 4-digits of your cell phone number as an anonymous tracking ID:

The Demographic Survey will collect the following data/information from you: age, gender, marital status, number of children under 13 years, number of children 13-18 years, employment status, DNP program type, DNP program focus, and stage of your DNP Final Project.

The pre and post-intervention surveys include questionnaires regarding your perception of connectedness to other DNP students in the DNP program at Jacksonville University, and your perception of perceived stress both before and after the use of the virtual DNP Final Project Peer Support Community.

The evaluation survey will collect information regarding your use and evaluation of your experience with the virtual DNP Final Project Peer Support Community, and any suggestions or comments you may have regarding it.

Completion of the project online surveys will constitute implied consent for the anonymous use of your responses in the quality improvement project.

If you complete your DNP final project and/or are no longer enrolled in NUR 702 or NUR 740 at Jacksonville University before the end of the quality improvement project, please contact the principal project leader, Pamela Simon Card MSN, APRN at pcard1@jacksonville.edu or 904-891-7491. It is requested that you complete the post-intervention surveys along with the evaluation survey when you leave the quality improvement project, and she will be able to facilitate your doing so.

In addition to the information listed above, identifiable private information will be used in Blackboard to grant access to the virtual DNP Final Project Peer Support Community survey data. I may use this de-identified survey data for future research studies or share with other investigators without additional informed consent from you.
If you have any questions now or at any time during the project, you may contact anyone listed under Project Leaders above.

**BENEFITS OF THE STUDY:** You may benefit from being involved in this project. You may find interaction with fellow DNP students in the online peer support discussion forum and the online final project online resources toolkit helpful to you while working on your DNP final project. Others may also benefit from the interaction in the online peer support discussion forum and from use of the final project online resources toolkit. The project results may provide evidence regarding the effect of peer and informational support as intervention to improve feelings of student connectedness and reduced perceived stress for DNP students in a limited-residency program, and could provide evidence for future research.

No promise or guarantee of benefits has been made to encourage your participation.

**RISKS OF THE PROJECT:** The risks of taking part in this project can include anxiety, frustration with the use of the technology, or not benefiting from the use of the virtual DNP Final Project Peer Support Community. Although the project leaders will take every precaution to maintain confidentiality of the project data, due to the nature of online discussion forums, participation in the online peer support discussion forum of the DNP Final Project Peer Support Community cannot be guaranteed confidential from other study participants or the project leaders. The project leaders request that you respect the privacy of your fellow participants by maintaining high ethical standards of confidentiality and by not sharing information outside of the virtual DNP Final Project Peer Support Community peer support discussion forum. There is also the possible loss of confidentiality of project data.

To minimize some of the risks associated from being involved in the project, you will be asked to agree to the following Non-Disclosure Statement before signing this informed consent:

“I agree to maintain high ethical standards of confidentiality of the information in the virtual DNP Final Project Peer Support Community, and to maintain the confidentiality of the information discussed by all participants in the DNP Final Project Peer Support Community. I will not share this information with others outside of the DNP Final Project Peer Support Community.”

All project data will be protected using the last 4-digits of your cell phone number as an anonymous tracking ID, stored on the secure One Drive of the university with password protection, and data will be shared anonymously for statistical analysis. Project results will also be reported anonymously with no identifying information. These risks can be mitigated by the option of not participating in this quality improvement project.

Mental health and psychological support, if needed, is available at the Jacksonville University Counseling Center at 904-256-7180 or through an anonymous phone call to the National Alliance on Mental Illness Helpline: 1-800-950-NAMI (6264) or the National Suicide Prevention Lifeline: 1-800-273-TALK (8255)

**COSTS / COMPENSATION:** You will not be paid for being part of this quality improvement project. The virtual DNP Final Project Peer Support Community will be provided at no cost to you, and is accessible online as a student-run Blackboard organization at Jacksonville University.
**ALTERNATIVE TO PARTICIPATING IN THE PROJECT:** The alternative to taking part in this project is not to participate. If you do not want to be part of this quality improvement project, you will continue in your usual role as a DNP student and will not have access to the virtual DNP Final Project Peer Support Community.

**CONFIDENTIALITY:** Records or data obtained as a result of your participation in this project may be inspected by the persons conducting this project and/or the Jacksonville University’s Institutional Review Board, provided that such inspectors are legally obligated to protect any identifiable information from public disclosure, except where disclosure is otherwise required by law or a court of competent jurisdiction. These records will be kept private in so far as permitted by law. Also, other Jacksonville University officials have the legal right to review project records, and they will protect the secrecy (confidentiality) of these records as much as the law allows. Otherwise, your project records will not be released without your permission unless required by law or a court order. However, if we learn that you intend to harm yourself or others, we must report that to the authorities.

Your name and Jacksonville University email address will be used only to give you access to the virtual DNP Final Project Final Project Peer Support Community in Blackboard, but will not be connected to your survey data or any other data provided in this project, and will be kept confidential.

We plan to publish the results of this quality improvement project. To protect your privacy, we will not include any information that may identify you. All survey responses will be kept confidential, and we will protect your identity from our project records by using the last 4-digits of your cell phone number as an anonymous tracking ID for data analysis. All project results will be reported anonymously. Your name, email address, and any other information that can directly identify you will be stored separately from the data collected as part of the project. All project information and data will be stored in password-protected files on the secure University One Drive. In addition, your instructors will not be informed whether or not you decided to participate in the virtual DNP Final Project Peer Support Community peer support discussion forum or utilized the online Resources Toolkit.

Please be advised that although the project leaders will take every precaution to maintain confidentiality of the project data, due to the virtual nature of online discussion forums, the project leaders do not have control over disclosure of communications that occur within the online peer support discussion forum. As such, the confidentiality of student participation in the online peer support discussion forum cannot be maintained from other student participants or the DNP project leader. The project leaders request that you respect the privacy of your fellow participants by maintaining high ethical standards of confidentiality and by not sharing information outside of the virtual DNP Final Project Peer Support Community peer support discussion forum. Reports of project findings will not include any identifying information.

We will keep your project data to use for future research or other purpose. Your name, JU email address, and other information that can directly identify you will be deleted from the project data collected as part of the study. We may share your project data with other investigators, publish study findings to an online research repository, and submit them to professional journals without asking for your consent again, but it will not contain information that could directly identify you and all project results will be published anonymously.
CONFLICT OF INTEREST: In general, presenting research and project results helps the career of a scientist. The project leaders may benefit if the results of this project are presented at scientific meetings or published in scientific journals. If the results of this quality improvement project are presented at scientific or professional meetings or published in scientific or professional journals, your name will not be used, and the results of the quality improvement project will be presented anonymously.

RIGHT TO PARTICIPATE OR WITHDRAW: You are free to stop taking part in this quality improvement project at any time without penalty and without losing any benefits to which you are entitled. You will be provided, as applicable, with any significant new findings developed during the course of this project that may relate or influence your willingness to continue participation.

If you decide to stop taking part in this quality improvement project for any reason, cease to be enrolled in NUR 702 or NUR 740, or have any questions about the project, please contact Pamela Simon Card MSN, APRN at pcard1@jacksonville.edu or 904-891-7491. Upon withdrawal from the project you will no longer have access to the virtual DNP Final Project Peer Support Community.

If you choose to tell the project leaders why you are leaving the project, your reasons may be kept as part of the project record. If you decide to withdraw from the project, it may be impossible to exclude the data that has already been collected, and any survey responses you have submitted may be used in the project. In addition, the project leaders may retain and use data collected prior to your withdrawal, including Protected Personnally Identifiable Information (PPII), as long as the uses are consistent with the project purpose and procedures as described in the IRB application and consent documents. If you have any questions regarding your rights as a quality improvement project participant, you may call the JU Office of Research & Sponsored Programs at (904) 256-7151.

You may be withdrawn from the project without your consent for the following reason: If you do not meet the eligibility criteria of being enrolled in NUR 702 or NUR 740 at Jacksonville University.

QUESTIONS ABOUT THE PROJECT: Take as long as you like before you make a decision. We will be happy to answer any questions you have about this project. If you have further questions about this project or if you have a project-related problem, you may contact the project leaders(s):

Pamela Simon Card  pcard1@jacksonville.edu  904-891-7491
Dr. Pam Rillstone  prillst@ju.edu  904-610-2761

If you have any questions regarding your rights as a quality improvement project participant, you may contact the JU Institutional Review Board at (904) 256-7151.

CONSENT TO PARTICIPATE: You have been informed about this project’s purpose, procedures, possible benefits, and risks; and the alternatives to being involved in the project. You have been given the opportunity to ask questions before you sign, and you have been told that you can ask other questions at any time.

In order to consent to be part of this quality improvement project, you must also agree to the Non-Disclosure Statement below.
Non-Disclosure Statement: Please check if you agree.

☐ I agree to maintain high ethical standards of confidentiality of the information in the virtual DNP Final Project Peer Support Community, and to maintain the confidentiality of the information discussed by all participants in the DNP Final Project Peer Support Community. I will not share this information with others outside of the DNP Final Project Peer Support Community.

If you cannot agree to the above statement please see the project leader(s) as you may be ineligible to participate in this project.

Informed Consent Agreement, please read and click your desired choice below:

By clicking agree below, I understand that my consent does not take away any legal rights. I further understand that nothing in this consent form is intended to replace any applicable Federal, state, or local laws. I agree to voluntarily enter this quality improvement project and to have my survey responses utilized for the purposes of this project. I have had a chance to read this consent form, and it was explained to me in a language which I use. I have had the opportunity to ask questions and have received satisfactory answers. I have been informed that I can withdraw at any time, and am not waiving any of my legal rights. I affirm that I am over 18 years of age and enrolled in NUR 702 or NUR 740 at Jacksonville University.

☐ I Agree to participate in the quality improvement project
☐ I Do not agree to participate

If you agree to participate, please enter your name and Jacksonville University email address for access to the virtual DNP Final Project Peer Support Community below:

Please enter your name here:

________________________________________________________________________________

Please enter your Jacksonville University email address here:
Appendix B – Permission for use of the Doctoral Student Connectedness Scale

Permission to use DSCS

Steven Terrell <terrell@nova.edu>


Sent: Sun 12/16/2018 10:49 AM
To: Card, Pamela

Message  doctoral student connectedness.pdf (177 KB)

Hello Pamela,

Your suggested terms of use for our article "The development, validation, and application of the Connectedness Scale" are acceptable; please find an original copy attached.

Please let me know if I can help in any manner, I look forward to seeing your results.

Best wishes,

Steve Terrell

Steven R. Terrell, Ph.D.
Professor
College of Engineering and Computing
Fischler College of Education
Nova Southeastern University

Permission request to use a portion of an existing survey instrument

Card, Pamela


Sent: Mon 10/29/2018 2:48 PM
To: terrell@nova.edu

To: Dr. Stephen Terrell
Institution: Nova Southeastern University
Department: College of Engineering and Computing

October 28, 2018
Dear Sir:

I am a Doctor of Nursing Practice in Educational Leadership student from Jacksonville University writing my Doctor of Nursing Practice final project tentatively titled “Promoting DNP Student Program Persistence through Peer and Final Project Support” under the direction of my Doctor of Nursing Practice Chair Dr. Pamela Rillstone. I am studying student peer and program connectedness as influences on DNP final project persistence and progression.

I would like your permission to use the Doctoral Student Connectedness Survey instrument in my research study with DNP students. I also respectfully request a copy of the instrument and information regarding its reliability and validity information from you.

I would like to use your survey under the following conditions:

• I will use this survey only for my research study and will not sell or use it with any compensated or curriculum development activities.
• I will include the copyright statement per your directions on all copies of the instrument.
• I will send a copy of my research study to your attention upon completion if requested.

If these are acceptable terms and conditions, please indicate so by replying to me via email: pcard1@jacksonville.edu, and send me a copy of the instrument and its reliability and validity information referenced above if possible.

Thank you for your assistance.

Sincerely,

Pamela S. Card

Pamela S. Card MSN, ARNP
Doctor of Nursing Practice in Educational Leadership student
Jacksonville University
pcard1@jacksonville.edu
Appendix C – Permission for use of the Perceived Stress Scale

“Permission for the use of the Perceived Stress scale is not necessary when use is for nonprofit academic research or nonprofit educational purposes.”

Source: Sheldon Cohen, Ph.D., Department of Psychology, Carnegie Mellon University, 5000 Forbes Avenue, Pittsburgh, PA 15213. Retrieved from http://www.psy.cmu.edu/~scohen/
Appendix D – DNP Final Project Peer Support Community Demographic Survey

DNP Final Project Peer Support Community Demographic Survey

Demographic Survey developed by P. Simon Card MSN, APRN, DNP student, Project Leader

Thank you for your time and cooperation in completing this survey.

Please enter the last 4 digits of your cell phone number to use as an anonymous tracking ID for this demographic survey, the pre and post surveys, and the evaluation survey for this quality improvement project.

1. Gender
   Mark only one oval.
   ○ Male
   ○ Female
   ○ Other/Prefer not to answer

2. Age
   Mark only one oval.
   ○ 18-29
   ○ 30-39
   ○ 40-49
   ○ 50-59

3. Marital Status
   Mark only one oval.
   ○ Single
   ○ Married
   ○ Divorced
   ○ Widowed
   ○ Partnered

4. Number of children under 13
   Mark only one oval.
   ○ 0
   ○ 1
   ○ 2
   ○ 3
   ○ 4 or more
5. Number of children 13-18
   Mark only one oval.
   - 0
   - 1
   - 2
   - 3
   - 4 or more

6. Employment status
   Mark only one oval.
   - Full-time
   - Part-time
   - Self-employed
   - Combination
   - Not employed

7. DNP Program Type
   Mark only one oval.
   - BSN-DNP
   - MSN-DNP

8. DNP Program Focus
   Mark only one oval.
   - APRN
   - Leadership

9. Stage of DNP Project
   Mark only one oval.
   - Proposal Development
   - Implementation
   - Evaluation/Dissemination
Appendix E – Pre-Intervention Doctoral Student Connectedness Scale

**Doctoral Student Connectedness Scale**

Pre-Intervention Scale

Scale developed by Dr. Steve Terrell. Permission for use of this scale received from Dr. Steve Terrell, Nova Southeastern University, at terrell@nova.edu on 12/16/18.

Thank you for your time and cooperation in completing this survey.

**Please enter the last 4 digits of your cell phone number to use as an anonymous tracking ID for the demographic survey, the pre and post surveys, and this evaluation survey for the study.**

---

**1. Please rate each sentence from 1 (strongly disagree) to 5 (strongly agree) regarding your current experience with your Doctor of Nursing Practice (DNP) Final Project thus far.**

*Check all that apply.*

<table>
<thead>
<tr>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Neither agree nor disagree</th>
<th>Agree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>I feel that students currently working on their DNP Final Project care about each other.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I feel connected to other students in the program working on their DNP Final Project.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I feel like I can communicate easily with other students about the DNP Final Project.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I communicate regularly with other students working on their DNP Final Project.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I feel I can trust other students who are working on their DNP Final Project.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I feel a spirit of community with other students while working on my DNP Final Project.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I feel like I can rely on other students working on their DNP Final Project for support.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Appendix F - Pre-Intervention Perceived Stress Scale

Perceived Stress Scale

Pre-Intervention Scale

Scale developed by Dr. Sheldon Cohen. "Permission for use of scale is not necessary when use is for nonprofit academic research or nonprofit educational purposes." Source: Sheldon Cohen, Ph.D., Department of Psychology, Carnegie Mellon University, 5000 Forbes Avenue, Pittsburgh, PA 15213. Retrieved from [http://www psy.cmu.edu/~scohen/](http://www psy.cmu.edu/~scohen/)

Thank you for your time and cooperation in completing this survey.

Please enter the last 4 digits of your cell phone number to use as an anonymous tracking ID for the demographic survey, the pre and post surveys and the evaluation survey for this study.

2. Please respond to the following questions and please indicate how often you felt or thought a certain way regarding your current DNP Final Project experience thus far.
   
   *Check all that apply.*

<table>
<thead>
<tr>
<th>In the last month, how often have you been upset because of something that happened unexpectedly?</th>
<th>Never</th>
<th>Almost Never</th>
<th>Sometimes</th>
<th>Fairly often</th>
<th>Very often</th>
</tr>
</thead>
<tbody>
<tr>
<td>In the last month, how often have you felt that you were unable to control the important things in your life?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>In the last month, how often have you felt nervous and &quot;stressed&quot;?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>In the last month, how often have you felt confident about your ability to handle your personal problems?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>In the last month, how often have you felt that things were going your way?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>In the last month, how often have you found that you could not cope with all the things that you had to do?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>In the last month, how often have you been able to control irritations in your life?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>In the last month, how often have you felt that you were on top of things?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>In the last month, how often have you been angered because of things that were outside of your control?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>In the last month, how often have you felt difficulties were piling up so high that you could not overcome them?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Appendix G – Post-Intervention Doctoral Student Connectedness Scale

**Doctoral Student Connectedness Scale**

Post-Intervention Scale

Scale developed by Dr. Steve Terrell. Permission for use of this scale received from Dr. Steve Terrell, Nova Southeastern University, at terrell@nova.edu on 12/16/18.

Thank you for your time and cooperation in completing this survey.

Please enter the last 4 digits of your cell phone number to use as an anonymous tracking ID for the demographic survey, the pre and post surveys, and this evaluation survey for the study.

---

1. Please rate each sentence from 1 (strongly disagree) to 5 (strongly agree) regarding your experience with the DNP Final Project Student Community.

*Check all that apply.*

<table>
<thead>
<tr>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Neither agree nor disagree</th>
<th>Agree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>I feel that students currently working on their DNP Final Project care about each other.</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
</tr>
<tr>
<td>I feel connected to other students in the program working on their DNP Final Project.</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
</tr>
<tr>
<td>I feel like I can communicate easily with other students about the DNP Final Project.</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
</tr>
<tr>
<td>I communicate regularly with other students working on their DNP Final Project.</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
</tr>
<tr>
<td>I feel I can trust other students who are working on their DNP Final Project.</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
</tr>
<tr>
<td>I feel a spirit of community with other students while working on my DNP Final Project.</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
</tr>
<tr>
<td>I feel like I can rely on other students working on their DNP Final Project for support.</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
</tr>
</tbody>
</table>
Appendix H – Post-Intervention Perceived Stress Scale

Perceived Stress Scale

Post-Intervention Scale

Scale developed by Dr. Sheldon Cohen. "Permission for use of scale is not necessary when use is for nonprofit academic research or nonprofit educational purposes." Source: Sheldon Cohen, Ph.D., Department of Psychology, Carnegie Mellon University, 5000 Forbes Avenue, Pittsburgh, PA 15213. Retrieved from http://www.psy.cmu.edu/~scohen

Thank you for your time and cooperation in completing this survey.

1. Please enter the last 4 digits of your cell phone number to use as an anonymous tracking ID for this demographic survey, the pre and post surveys and the evaluation survey for this study.

---

1. Please respond to the following questions and please indicate how often you felt or thought a certain way since using the DNP Final Project Student Community.

*Check all that apply.*

<table>
<thead>
<tr>
<th>Question</th>
<th>Never</th>
<th>Almost</th>
<th>Sometimes</th>
<th>Fairly Often</th>
<th>Very Often</th>
</tr>
</thead>
<tbody>
<tr>
<td>In the last month, how often have you been upset because of something that happened unexpectedly?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>In the last month, how often have you felt that you were unable to control the important things in your life?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>In the last month, how often have you felt nervous and &quot;stressed&quot;?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>In the last month, how often have you felt confident about your ability to handle your personal problems?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>In the last month, how often have you felt that things were going your way?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>In the last month, how often have you found that you could not cope with all the things that you had to do?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>In the last month, how often have you been able to control imitations in your life?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>In the last month, how often have you felt that you were on top of things?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>In the last month, how often have you been angered because of things that were outside of your control?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>In the last month, how often have you felt difficulties were piling up so high that you could not overcome them?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
DNP Final Project Peer Support Community and Final Project Resources Toolkit Evaluation Survey

Evaluation form developed by P. Simon-Card  MSN, APRN, DNP student, Project Leader

Thank you for your time and cooperation in completing this survey.

Please answer the following questions regarding your use of the DNP Final Project Peer Support Community and Final Resources Toolkit.

Please enter the last 4 digits of your cell phone number to use as an anonymous tracking ID for the demographic survey, the pre and post surveys, and this evaluation survey for the study.

1. How often did you use the DNP Final Project Student Community?
   Mark only one oval.
   - More than 3x/week
   - 1-2x per week
   - Weekly
   - Biweekly
   - Monthly

2. How long on average did you stay in the DNP Final Project Student Community on average when using it?
   Mark only one oval.
   - 0-10 minutes
   - 10-20 minutes
   - 20-30 minutes
   - 30-40 minutes
   - More than 40 minutes
4. What was the most helpful aspect of the DNP Final Project Peer Support Community and Final Project Resources Toolkit for you?

5. What was the least helpful aspect of the DNP Final Project Peer Support Community and Final Project Resources Toolkit for you?

5. Additional Comments/Suggestions:
Appendix J – Peer Support Discussion Forum Provided Discussion Threads

The following discussion topics of common concerns regarding the preparation of a DNP Project were provided in discussion threads in the online discussion forum of the virtual DNP Student Final Project Community for student use. Student were also encouraged to start their own discussion threads as desired.

1 – Getting to know each other!

If you wish, you may post information about yourself and your DNP Final Project here to get to know your fellow students in this community.

Only the JU DNP students in this community will see your information, no faculty or staff have access to this community.

2 – Peer Support Discussion Forum

Interact with your fellow students regarding final project questions and concerns here!

Sharing information and concerns with your peers can be helpful to navigating this Final Project experience!

Please post questions or concerns regarding your DNP Final Project that you would like to discuss with your fellow DNP students.

Feel free to start your own discussion thread here for your project, discussion, or question to share with your peers.

All information discussed here is confidential to the JU students in this community only, and faculty and staff do not have access to it.

3 – Writing DNP Proposals and Final Reports Resources Discussion

This discussion thread is provided for discussion of the resources listed in the Resources Toolkit regarding the writing of DNP proposals and final reports. Please feel free to discuss your thoughts regarding them and their applicability to your DNP project process.

4 - DNP Project Support Resources Discussion

This discussion thread is provided for discussion of the resources listed in the Resources Toolkit regarding DNP Project Support Resources. Please feel free to discuss your thoughts regarding them and their applicability to your DNP project process.
5 – **Resources for reducing stress with DNP Final Projects Discussion**

This discussion thread is provided for discussion of the resources listed in the Resources Toolkit regarding resources for reducing the stress of the DNP final project process. Please feel free to discuss your thoughts regarding them and their applicability to your DNP project process.

6 – **Writing for Publication Resources Discussion**

This discussion thread is provided for discussion of the resources listed in the Resources Toolkit regarding writing for publication resources. Please feel free to discuss your thoughts regarding them and their applicability to your DNP project process.

7 – **Research Grant Resources Discussion**

This discussion thread is provided for discussion of the resources listed in the Resources Toolkit regarding research grant resources. Please feel free to discuss your thoughts regarding them and their applicability to your DNP project process.
Appendix K – Online Final Project Resources Toolkit List of Resources

The following items will be posted in the online Resources Toolkit for student use:

**Resources for Writing DNP Proposals and Final Reports**

*Choosing your DNP Project or Dissertation Title*
  This article gives helpful information regarding things to consider and do’s and don’ts regarding dissertation and DNP project titles.

*Scholarly Language and Writing*
  This article gives helpful information regarding scholarly writing and tone in the writing of a dissertation or DNP project.

*The Importance of Alignment*
  This article gives helpful information regarding the importance of alignment of the four foundational elements of the dissertation or DNP project.

*Assumptions, Limitations, Delimitations, and Scope of the Study*
  This article gives helpful information regarding these elements and how to identify them for your research or quality improvement project.

*Abstract Creation*
  This article gives helpful information regarding the writing of an abstract with a checklist and example.

*Definition of Terms in DNP Projects and Dissertations*
  This article discusses the need for a definition of terms, what to define, and how to define and cite them.

*Writing the Problem Statement*
  This article describes the importance of the problem statement, guidelines for writing it, and an example.

*Writing a Purpose Statement*
  This article describes the importance of the purpose statement, guidelines for writing it with a checklist, and examples.

*Writing the Review of the Literature*
  This article describes the purpose of a review of the literature, how to conduct one and appraise studies, with a sample literature review table and summary.

*How to Write a DNP Project or Dissertation Literature Review – an in-depth guide*
  This article gives helpful information regarding steps to take and the writing of a literature review and summary

*Finding doi numbers for your literature*
  This handout provides a resource for finding doi numbers for your literature articles.

*Further Resources for Writing a Literature Review*
  https://jameshaytonphd.com/how-to-write-a-phd-literature-review/
  https://academicguides.waldenu.edu/writingcenter/assignments/literaturereview
Developing a Theoretical Framework
This article discussed how to develop a theoretical framework for a DNP Project or dissertation with helpful steps and tips.

Using Tense Correctly in your Research or Quality Improvement Project
This article describes the use of tense in both the proposal and final report of the project with examples.

Mission-creep and Use of Headings
This article gives helpful information regarding staying focused on the specific mission and purpose of your research and how to use APA headings to structure your writing.

Levels of Measurement and Likert-Type Scales
This article gives helpful information regarding the four levels of measurement and the use of Likert-type scales.

Quantitative Analysis
This article gives helpful information regarding the role of statistics in analyzing research.

Ethics and IRB Tips
This article gives helpful information regarding ethical challenges in doctoral research and how to address them.

Permissions to use Surveys, Charts, and Figures
This article gives sample letters for requesting permission to use these items.

Dissertation Checklist before Proposal Submission
This article gives useful information regarding a checklist to review one’s proposal before submitting it.

10 Ways to defend your DNP project or dissertation proposal or final report
This article gives very helpful strategies for persevering in your DNP project and getting it done.

Link to JU student DNP Final Project Papers
This link to the Virginia Henderson Repository above lists several final papers from DNP students at JU, and may be helpful in seeing how the final paper is written with data analysis and results discussion.

DNP Final Project Support Resources

Guide to Developing and Defending your DNP Capstone Project
https://www.doctorofnursingpracticednp.org/capstone-project-guide/
This webpage describes the basics of a DNP project, developing a DNP project using an evidence-based approach, and stages and components of a DNP project.

Doctor of Nursing Practice DNP Toolkit  https://www.aacnnursing.org/DNP/Tool-Kit
This website provides resources for both DNP students and faculty regarding the scope and guidelines for a DNP project, along with examples of practice scholarship and dissemination strategies.
10 Strategies for Getting Unstuck in writing your DNP Project or Dissertation

This article gives helpful information regarding how to handle challenges with your DNP Project.

Completing your DNP Project or Dissertation without Tears

This article from Columbia University gives useful tips for getting started and persevering with a DNP Project or a doctoral dissertation, for organizing and writing, and for dealing with common challenges.


This website contains many resources for DNP Project and dissertation success, including worksheets, tools, guides, and slide shows covering all areas of planning and writing a final project or doctoral dissertation.

Ultimate Guide to Dissertation Writing

https://www.oxbridgeessays.com/blog/dissertation-ultimate-guide/

This website contains many links to free articles regarding the planning, preparation, and writing of a DNP Project or a doctoral dissertation.

DNP Scholarly Projects  https://www.doctorsofnursingpractice.org/resources/dnp-scholarly-projects/

This webpage provides abstracts and examples of DNP projects completed by previous students that can be helpful, along with links to grants and scholarships and a DNP Project Repository.

DNP Online Community  https://www.doctorsofnursingpractice.org/

This website is an online community for current DNPs and DNP students to support professional growth.

Resources for Reducing Stress with DNP Final Projects

Live Stress Resources

Jacksonville University Counseling Center: 904-256-7180

Anxiety Support

National Alliance on Mental Illness Helpline: 1-800-950-NAMI (6264)

National Suicide Prevention Lifeline: 1-800-273-TALK (8255)

Dealing with Doctoral Stress the Right Way – Advice from others

This article gives helpful information regarding ways to deal with the stress of being a doctoral student.

Mindfulness Meditation for Stress Management

This handout describes mindfulness meditation and gives websites and an app for resources with guided mindfulness meditations.

Strategies for DNP Project or Dissertation Burnout

https://www.writethedamndissertation.com/blog/approaching-burnout?cid=25470f8e-401a-4c92-8235-e4ae9673fde2

This website gives some beneficial strategies for sustaining motivation to keep going and finish one’s dissertation or DNP project.

Stress Management Apps for Tablets and Phones

This handout lists popular stress management apps that can be used on tablets and phones
Stress Release using Emotional Freedom Technique (EFT) Tapping
This handout describes EFT and its use, along with some guided tapping mediations for anxiety and feelings of being overwhelmed, along with productivity.

The Working Woman’s Guide to Writing the DNP Project or Dissertation
This article gives very useful strategies for persevering in your DNP project as a working woman (or man) and caring for yourself.

Writing for Publication Resources
Finding Nursing Journals Appropriate to your Final Project Topic
This document contains links to websites that can help you get started in finding nursing journals to submit your Final Project article to.

10 Steps from EBP Project to Publication
This article gives very useful information regarding steps to take to prepare to submit an article to a journal for publication.

Writing a Journal Article - Guidance for Novice Authors
This article discusses the process of drafting and revising an article for journal submission, the peer-review process, and researching journals for possible article submission.

To write or not to write: a nurse’s account of writing for publication
This article describes the experience of a nurse in writing for publication and essential areas to consider.

Writing for Publication: Step by Step – Becoming a Published Writer
This article, written by a nurse, discusses steps to take to write for publication and gives helpful writing and publication resources.

What Reviewers Say: Authors, Listen Up!
This article describes pet peeves of peer-reviewers and offers tips for success in writing for publication.

Research Grant Resources
Grant Proposals – or Give Me the Money
This article gives helpful information regarding the grant proposal process, identifying needs, and the writing of all parts of the grant proposal.

Research Abstracts, Proposals, and Grant Writing Basics
This presentation gives helpful information regarding the writing of abstracts and proposals for applying for a grant.

How to Plan and Write a Budget for a Research Grant Proposal
This article gives helpful information regarding expenses to include in a research budget

Guide for Writing a Funding Proposal
This article discusses how to organize a funding proposal with hints and examples.
Quality Improvement Project

Evaluating the Use of a Virtual DNP Student Community in a Limited-Residency Program

The purpose of this project is to evaluate the use of a virtual DNP Final Project Student Peer Support Community with Final Project Resources Toolkit, on student feelings of perceived stress and connectedness to other DNP students working on their final projects.

To participate you must be registered in NUR 702 or NUR 740.

If you agree to participate, you will be asked to complete a demographic survey, two short surveys at two time points, an evaluation survey, and to participate in the virtual DNP Final Project Student Peer Support Community in Blackboard for approximately 12 weeks.

Benefits include peer support during your final project work and an online Final Project Resources toolkit for your use. You will not have to pay and will not receive compensation for participating.

To participate in or for more information about this QI project, please contact:
Pamela Simon Card MSN, APRN, DNP candidate, pcard1@jacksonville.edu 904-891-7491

This QI is being conducted under the supervision of Dr. Pam Rollstone, Faculty, prillst@ju.edu

Keigwin School of Nursing
BROOKS REHABILITATION
COLLEGE OF HEALTHCARE SCIENCES
MEMORANDUM OF APPROVAL

TO: Ms. Pamela Card, Principal Investigator
CC: Dr. Pam Rillstone, Responsible Primary Investigator
FROM: Dr. Claribel Torres-Lugo, Research Compliance Administrator, Office of Research and Sponsored Programs (ORSP)

The Jacksonville Institutional Review Board (JU IRB) reviewed the above-referenced project and determined, after an expedited review-categories 6 and 7, that your study met the approval criteria outlined in 45 CFR 46.111.

If you submitted a proposed consent and or any recruitment materials (e.g., email scripts, flyers) with your application, the approved stamped documents are attached to this approval notice. Only the stamped version of these documents may be used in recruiting subjects.

If the project is not completed by October 31, 2020, you will be required to submit a Continuing Review Report to the IRB. As a courtesy, a renewal notice will be sent to you before the expiration date; however, it is your responsibility as the Principal Investigator to submit a timely request for a renewal.

Please be advised that any change in the protocol for this study must be reviewed and approved by the IRB before the implementation of the proposed change. A Revision/Amendment Form is required for consideration of any change. Federal Regulations require that the Principal Investigator promptly report, in writing, any unanticipated problems or adverse events involving risks to research subjects or others. If you have questions, please contact the Office of Research and Sponsored Programs at juirb@ju.edu or (904) 256-7151.