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Perceived Critical Success Factors for Native American and Non-Native American Pre-licensure Nursing Students in Northern New Mexico

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Perceived Critical Success Factors for Native American and Non-Native American Pre-licensure Nursing Students in Northern New Mexico

By

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A Scholarly Project Submitted to the College of Nursing in Partial Fulfilment of the Requirements for the Degree of

Doctor of Nursing Practice

University of New Mexico
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Abstract

Considering the consistent healthcare system load demands, nursing shortages persist, especially in remote areas of the United States. It is vital that students interested in attending nursing school and working in their home communities have expanded nursing program access and supports in order to supply the necessary nursing workforce in remote areas. Lack of diversity in the nursing profession weakens healthcare delivery. Native Americans are underrepresented as nursing students and employed nurses. Measures to provide a more diverse workforce should concentrate on recruitment, retention, and graduation rates of underrepresented minority nursing students. Limited research is available surrounding Native American nursing students' nursing program experiences in comparison to non-Native American nursing students and no quantitative studies explore their perceived academic self-efficacy. This study explored perceived critical success factors for Native American and non-Native American pre-licensure nursing students. A questionnaire was administered to nursing students at three New Mexico pre-licensure nursing programs to answer the question, "What are perceived critical success factors for Native American and non-Native American pre-licensure nursing students?"

Keywords: Native American nursing students, prelicensure nursing students, college self-efficacy, student persistence, student resiliency

Dedication

This is dedicated to Native American nursing students in hopes of clearing a supportive and rewarding path in their academic endeavors to become nurses. This is also dedicated to nursing program educators and program support staff who make great sacrifices in order to provide the leadership, guidance, and academic instruction needed to create equitable educational opportunities for students. Their selfless efforts improve the quality of the lives of their students and ultimately improve the healthcare of communities.

Acknowledgements

I appreciate the guidance, advocacy, and patience provided to me during my DNP journey by my incredibly supportive chair, Dr. Cole. She was instrumental in the successful completion of my program and quality of this project.

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Dr. Martin

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My 2021 DNP Cohort

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Chapter 1

Introduction and Background

The U.S. Department of Human Services Health Resources and Services Administration (HRSA) reported that in 2008, "…American Indians/Alaska Natives are underrepresented in the RN population" (HRSA, 2010, p. 7-6) and that only 0.8% of the nearly three million RNs in the United States identified as American Indian/Alaska Native (HRSA, 2010, figure 7-5). Only 0.6% of nursing students enrolled in RN programs are American Indian/Alaska Native (National League for Nursing, 2018). In 2017, 911 American Indian/Alaska Native nursing students graduated from a prelicensure program compared to over 97,000 White students (Campaign for Action, 2019). More than 46% of American Indian/Alaska Natives, approximately one million people, live in rural areas (U.S. Census Bureau, 2016). Extensive work is needed to augment the number of Native American nursing students and nurses so that healthcare demands can be met, particularly in rural areas.

Diversity and Cultural Competency

Rural communities such as Native American reservations need more Native American nurses in order to provide truly culturally competent nursing care (Lane & Petrovic, 2018). Various nursing and other healthcare programs provide clinical experiences in remote locations to students and providers from other areas, teach them about how to provide culturally competent care, and recruit these students and providers (Alexander-Ruff & Kinion, 2018; Norbye et al., 2018), but a different approach is needed to utilize local talent to supply the workforce. Having racially and ethnically diverse healthcare workers promotes cultural competence and these factors improve healthcare quality, patient satisfaction, and access to care (Health Resources and Services Administration Health Workforce, 2017; Sullivan, 2004). Patients can relate to a

healthcare team that has a similar background, speaks the same language, and understands culturally appropriate health promotion. Native American nurses who care for their Native American communities improve healthcare delivery.

Native American Educational Challenges

Nursing programs must mitigate Native American nursing educational challenges in order to provide workforce solutions. Nursing programs are often inaccessible for Native American students, e.g., there is only one tribal college and university (TCU) that offers a Bachelor of Science in nursing program in the United States (Salish Kootenai College, 2019). Many Native American nursing students obtain their nursing degrees away from their reservation or original rural community and never return to work as a nurse after their schooling. Some never complete their nursing education. Attrition rates are nearly one-third for all nursing students (Walker, 2016). Attrition rates are unknown for American Indian/Alaska Native nursing students due to small sample sizes and unreliable data for this general population (U.S. Department of Education, 2019). Other academic success outcome measures, such as the NCLEX pass rate are not available for this population. The National Council of State Boards of Nursing does not report NCLEX pass rates by race and when asked for the data, stated that they could not share Native American RN NCLEX pass rates due to the "sensitive nature" of the data (National Council of State Boards of Nursing Customer Service NCLEX Info, personal communication, January 23, 2020). Only general overall RN and PN NCLEX pass rates are available (National Council of State Boards of Nursing, 2019). Only 41% of American Indian/Alaska Native bachelor's students from various programs graduate in a six-year timeframe (U.S. Department of Education, 2017). It is essential to have diverse staff and faculty that understand Native American issues (Kirkness & Barnhardt, 1991; Shotton et al., 2013), but

only 0.4% of nursing faculty are American Indian (National League for Nursing, 2017). The quality of life of nurses who desire to attend nursing school and/or to obtain employment in their own community improves when they can access local or online nursing programs and ultimately work at home after graduation. It is imperative that nursing programs provided equitable access and that more Native American nurses become employed in rural nursing positions. Nursing programs promote workforce diversity by concentrating on the recruitment, retention, and graduation rates of underrepresented minority (URM) nursing students.

Problem Statement

Now more than ever, it is essential to address the shortages of nurses in rural areas, particularly on Native American reservations and rural locations such as those in northern New Mexico. This issue has been brought to the forefront during the recent global Covid-19 pandemic. The catastrophic loss of lives, insufficient medical personnel, personal protective equipment, and other basic resources have been devastating for the Navajo Nation (Rosenthal et al., 2020; Sarap et al., 2020). Knowledge about critical success factors for Native American nursing students will boost graduation rates and provide more Native American nurses in the workforce to serve and improve the health of their communities.

Study Purpose/PICOT Question

The purpose of this study was to explore perceived critical success factors that nursing students need and to determine any differences between Native American and non-Native American pre-licensure nursing students at the same university. Academic experiences shared by students are discussed. Data were analyzed to recommend student success supports for implementation and reinforcement to academic institutions, faculty, and staff. Further research and policy recommendations are included. The PICOT question was, "what are perceived critical

success factors for Native American and non-Native American pre-licensure nursing students at three northern New Mexico colleges?"

Objective and Goals

This quantitative study surveyed nursing students at three northern New Mexico colleges and explored perceived critical success factors for their academic success. The collected data examined whether there were any differences in academic self-efficacy between Native American and non-Native American nursing students. Free text comments allowed students to contribute additional details about their academic experiences. The goal of the study was to synthesize these results and other literature findings to add to the body of literature related to the success of Native American and other pre-licensure nursing students from programs in northern New Mexico.

Chapter 2

Review of Literature

This literature review explored the availability of research about Native American nursing student critical success factors. Since there is a paucity of literature about this population's educational experiences, other underrepresented minority group studies were also reviewed to better understand their nursing student experiences. A review of existing instruments revealed that there are several valid instruments available that measure factors such as student retention, persistence, resilience, and academic adaptation. The literature also discussed academic supports for Indigenous students and other nursing students.

Review Methods

The first step of this PubMed search yielded 13 results from the past five years using the keywords and Boolean AND/OR operators: "Indians," "North American," "Native American," and "Nursing Students." Next, a Boolean search performed on the key words, "Native American nursing students" or "underrepresented minority nursing students" AND "nursing education" in the Cumulative Index to Nursing and Allied Health Literature and Ovid/Medline databases from 2014-2018 yielded seven results. A PubMed Boolean search for models in the past five years used the keywords, "Tinto's model" AND "nursing students," and identified one article. This article's bibliography included three of Tinto's classic articles that were reviewed (Tinto, 1975, 1998, 2007). A PubMed Boolean search with key words: "nursing student" AND "satisfaction" AND "survey" AND "last 5 years," yielded 33 articles. Additional Boolean searches using a combination of the following terms yielded a total of 125 additional articles that were also reviewed: pre-licensure, RN to BSN, tool, instrument, social media, online learning, digital or mobile computing, technology, computer-assisted instruction, first generation, gaming,

gamification, e-learning, Indigenous, Aboriginal, college persistence questionnaire, resilience, and family.

Limited Research Availability

No studies compared Native American and non-Native American nursing students' nursing program experiences. Limited Native American nursing students' studies were available, so the geographical area for this literature search also explored Canada and Australia. Several Canadian and Australian studies investigated experiences of Aboriginal nursing students (Fowler et al., 2018; Lane & Petrovic, 2018; Milne et al., 2016; Pugh et al., 2018; Slatyer et al., 2016). Reyes et al. (2015) interviewed Canadian nursing students to look at patterns of stress and resilience, but this qualitative study, which individually interviewed participants with a semi-structured questionnaire, did not include Aboriginal students.

Other Minority Nursing Student Experiences

Ferrell et al. (2016) explored factors that contributed to minority-nursing students' success in undergraduate nursing degree programs. A mixed-methods descriptive design included a modified Minority Student Nurse Questionnaire (MSNQ). The researchers appointed minority student program directors to invite students to participate in the study, $n = 31$ (of whom $n = 4$ were American Indian) from two midwestern urban schools with BSN or ADN programs. The modified MSNQ tool explored student experience variables such as: friendliness of non-minority nursing students, fair grading of their work, and perceptions of their mentor/advisor). The study had limited generalizability; it included a small sample size of only successful students from two non-rural midwestern schools. Students could not report their race as multi-racial and may have indicated that they were "other"; the instrument combined race and ethnicity.

Alicea-Planas (2017) investigated Hispanic BSN students' academic experiences and utilized an unstructured qualitative design. Participants were current and former (n = 10) Hispanic Nursing students from a small Jesuit American college. Tinto's model described student retention efforts (Tinto, 1975, 1998, 2007) and is a common framework used for many studies (Browning et al., 2018; Davidson et al., 2009; Muller et al., 2017). Key findings suggested that first-generation student programs positively affected students. The study themes: a sense of belonging, diversity/cultural awareness, and appropriate academic and emotional support within their academic communities, are likely applicable to other URM nursing groups such as Native American populations. Although the study had a small sample size, the response rates were excellent and the ability for participants to review interview transcripts enhanced trustworthiness. This phenomenological study only included Hispanic BSN students from a private school in the northeastern United States, yet provided an understanding of Hispanic nursing students' experiences.

A qualitative study explored African American pre-licensure student experiences of 14 students from six states (White, 2018). Students felt that faculty and students watched or ignored them and some students disengaged from class or other students as a coping mechanism. This study suggested that diversity improves communication, stereotype issues, and bias in healthcare. Limitations of this study include the small convenience sample and specific URM group in the United States.

Warshawski et al. (2019) utilized a cross-sectional descriptive design via two questionnaires that explored nursing students' attitudes (some of whom were already registered nurses) about information and communication technologies (ICTs), their feelings of competency with ICTs, and whether different cultural backgrounds influenced these variables. The study used

Bandura's social cognitive theory (1986) as a model. A convenience sample of Israeli nursing students: *n* = 104 registered nurses and *n* = 144 nursing students participated. This study suggested that culture, language, age, professional status, and gender influenced nursing students' feelings of competency with ICTs and attitudes about them. Considerations of perceptions of competency, feelings about ICT training, and ICT acceptance cultural variations promote nursing student success at school and at work. Limitations of the study included: the use of a convenience sample, the study location in another country may not be generalizable to the United States, and the researcher indicated that a mixed-methods design was more appropriate.

A recent quantitative study analyzed nine years of data for over 6,400 students at a major southwest university to explore graduation rates and developmental course engagement. A Critical Race Theory and intersectionality model (which explores the impact of combined social, racial, and other determinants upon dependent variables) provided the framework for the study. The study found that 45% of Native American male undergraduate students were not as likely to graduate in a six-year timeframe when compared to the reference group. The study suggested that commonly perceived student success factors such as higher socioeconomic levels were not protective for these and other underrepresented minority student groups (López et al., 2018). Mixed-race student data and household income data were inconsistently available. López et al. (2018) suggested that proper exploration of gender, culture, class, and race-ethnicity factors in education identifies potential problems for resolution and contributes to social justice.

Powers et al. (2018) studied male pre-licensure nursing students at a university in the southeast United States to investigate their experiences during nursing school. The team performed individual interviews with a semi-structured questionnaire that explored necessary supports for the retention of male nurses. Some limitations of the study were the small sample

size (*N* = 11) of primarily older and mostly Caucasian students from one school. Power's research team developed excellent semi-structured questions for interviews.

Academic Success Survey Instruments

Several research instruments measure overall college student predictors of academic success and retention. Some studies utilized survey instruments that explored themes such as resilience, the intolerance of uncertainty, and investigated other cultural considerations surrounding international nursing student success (Lee, 2019; Park & Kim, 2019). The scale of campus life adaptation and the college life adaptation scale investigated Korean students' college adaptations and provided a framework for program development and nursing student support to promote college life transitions (Park & Kim, 2019). Davidson et al. (2009) developed the College Persistence Questionnaire (CPQ), which measured students' persistence in college, and this seminal study predicted whether students would return to college after their freshman year. The CPQ is a valid instrument (Davidson & Beck, 2016) with a Cronbach's alpha of .93 (Solberg et al., 1993). Several studies utilized versions of the CPQ and explored predictors of college performance, degree commitment, academic and career integration, and student retention (Gore, 2010; Mentzer et al., 2014; Muller et al., 2017). Browning et al. (2018) built upon Davidson's work and utilized the CPQ-2 Scale, the Gratitude Questionnaire-6, the Audit Trait Hope Scale, and the Social Support Scale to study college students (*N* = 653) in a southern United States college. This sample included 0.8% Native American/Alaska Native participants. The researchers suggested that student feelings of hope and gratitude positively influenced academic integration and indirectly improved college students' institutional commitment. Beck and Milligan's study (2014) of college students in online programs in the southeastern United States also utilized the CPQ-2 instrument and suggested that students' online program commitment is

due to interactions with their peers, instructors, and courses. There are few recent studies available about online course success and this study recommended more research to determine why students take online courses.

A new valid and reliable instrument, the Academic Nurse Self-Efficacy scale, measured Italian BSN students' academic self-efficacy and consisted of 21 items that measured factors such as auto-regulatory behavior, external emotion management, collegiality, and internal emotion management (Bulfone et al., 2020). Academic institutions can use such instruments to individualize supports provided to students based upon their self-efficacy scores. It is evident that there are great opportunities to expand the exploration of nursing program student self-efficacy to focus on race/ethnicity, gender, and class gaps in achievement to determine any additional necessary student supports.

Doctoral Dissertations Exploring College Student Success

Several recent doctoral dissertations investigated factors that promoted college student success. A study of Diné students (N = 209) at two colleges in the southwest found positive correlations between academic self-efficacy and academic persistence; students also demonstrated strong tribal identities and reported strong family support (Shorty, 2018). Koenigsman studied 14 minority nursing students at a midwest college (Koenigsman, 2017). This qualitative study suggested that nursing students overcame potential barriers such as social isolation, cultural differences, and balance of other obligations or responsibilities to achieve academic success. Key success factors were: student perseverance and experience "grit" combined with social and family supports, financial supports, academic staff supports, and time management skills (Koenigsman, 2017, p. 233).

Academic Supports for Indigenous Students

Secondary sources also described social justice and cognitive appraisal coping models, students' perception of non-Aboriginal instructors, and recommended utilizing culturally competent teaching strategies such as: using humor, storytelling, a combination of face-to-face and online classes, and clinical simulation to improve Indigenous student experiences and retention (Lane & Petrovic, 2018). Canada developed strategist roles and improved community efforts to recruit Indigenous nursing students and enhance community and educational collaboration and policy development (Butler et al., 2018). Duke's School of Nursing offered a Health Equity Academy program (Carter & Derouin, 2016) that supported URMs with academic, financial, and emotional supports in order to level the playing field for these students. Academic supports and special programs for at-risk students promoted student retention and success (Murray et al., 2016; Muller et al., 2017) and required a multipronged approach (Tranter et al., 2018).

Academic Supports for Indigenous Faculty and Staff

Employee resource groups (ERGs) are an excellent way for organizations to provide diversity, equity, and inclusion support for Indigenous and other employees in the workplace. These groups provide opportunities for networking, cultural competency training, advocacy, special projects, and celebrations. I started an ERG at Western Governors University (WGU) in November, 2020 called Indigenous@WGU (Western Governors University, n.d.). This group currently has 11 participants and communicates information to our WGU colleagues about Native American history and commemorations such as Indigenous Peoples Day and Native American Heritage month. This group plans to celebrate Native American students' graduations,

offer informational sessions with Native American speakers, and host special events in the future.

Research Surrounding Nursing Students in General

Several studies explored recruitment and retention of URMs, but rarely included Native American students (Alicea-Planas, 2017; Fowler et al., 2018; Taylor et al., 2019; Upshur et al., 2018). Scarce and outdated information is available that focuses specifically on educational and technological needs of Native American nursing students (Crow, 1993; Dickerson et al., 2000; Katz et al., 2016). Several studies suggested that nursing students needed to feel that they were part of a nursing community while they built their nursing self-identity; academic, faculty, family, friend, and peer supports promoted their academic success (Cruz et al., 2018; HeavyRunner & DeCelles, 2002; Elmir et al., 2019; Porteous & Machin, 2018; Thomas & Revell, 2016). These factors are likely generalizable to URM nursing students.

Researchers only recently started to explore nursing student resilience. It is critical to understand resilience because it is an improvable psychological factor and is essential during the preparation for and eventual role in nursing (Reyes et al., 2015; Ríos-Risquez et al., 2018; Hurley et al., 2019; Thomas & Revell, 2016). The next step is to look at resilience and other factors that may be different in URM nursing students. It is likely that Native American students may have different needs during their academic career due to diverse educational, linguistic, cultural, racial-ethnic, and socioeconomic backgrounds. Some Native American nursing students speak English as an additional language. Linguistic curriculum adjustments offer students equal educational opportunities (Mulready-Schick et al., 2019). Very little is known about additional educational supports needed by URM nursing students, but a recent study suggested that students

and mentors who were similar in background and related well to each other had better academic experiences (Powers et al., 2018).

Literature Summary

There is a paucity of literature available about educational and other supports needed by URM nursing students. Several studies explore educational experiences of URM nursing students who are Canadian, Australian, Hispanic, African American, or from other cultural backgrounds. Historical accounts mention the poor boarding school experiences that Native American students sustained in the past (Child, 2000; Crow Dog & Erdoes, 1990; Lane & Petrovic, 2018; Waggoner & Levine, 2013; Deloria & Wildcat, 2001). Various instruments measured students' academic success, retention, and resilience, but findings may not be generalizable to all URM nursing students.

Research Gaps and Opportunities for Improvement

There are opportunities to expand upon research about Native American nursing students' educational experiences. Existing studies often have small sample sizes, may not be generalizable, are outdated, and often approach dropout rates of nursing students or retention efforts instead of focusing on how to improve educational cultural competencies for staff and students, campus inclusivity, and academic supports for URMs (Tinto, 2007). Limited information is available about the number of Native American nurses in the workforce. The dearth of valid and reliable data available about Native Americans is problematic (U.S. Department of Education, 2019; Shotton, et. al., 2013). Native American populations in research studies are often referred to as statistically insignificant and may not be included in important educational reports (U.S. Department of Education, 2019). It is difficult to analyze a Native

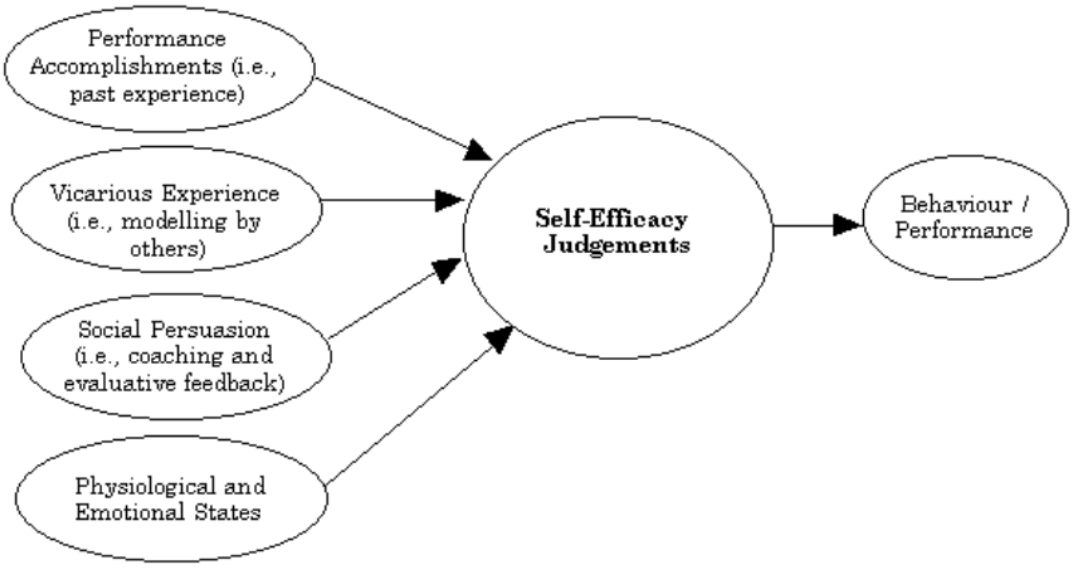
American population or attempt to problem solve and provide solutions when a population is ill defined.

Rural and/or reservation communities require more healthcare worker diversity. Research is lacking regarding the academic experiences of rural and urban nursing students. The literature indicates that in order to provide culturally competent care specifically in rural areas, it is essential to have more Native American nursing students, more Native American nursing faculty to support these students, and more Native American nurses working in rural and/or reservation communities. This scholarly project builds upon the existing body of work by exploring critical success factors that are needed by Native American, non-Native American, rural, and urban nursing students. This project provides ways to expand our pedagogy to support Native American nursing students, faculty and staff, and ultimately optimize healthcare services and outcomes.

Chapter 3

Theoretical Model

The theoretical model for this study was based upon Albert Bandura's self-efficacy model (Bandura, 1977). This theory originally explored perceived self-efficacy and behavioral change and suggested that self-efficacy results from four factors: "…performance accomplishments, vicarious experience, verbal persuasion, and physiological states" (Bandura, 1977, p. 191). Bandura suggested that mastering certain tasks, observing others who model successful accomplishment of tasks, using interactive social persuasion, and exhibiting emotionally intelligent behavior enhances self-efficacy (Bandura, 1977, p. 195, see Figure 2). Bandura's self-efficacy model (Staples et al., 1998) is applicable for studies in education and nursing because it provides a framework for investigating specific factors that promote self-efficacy and success.



Sources of Self-efficacy Information

Figure 1

From *"*A Quasi-Experimental Intervention to Improve Self-Efficacy for Eating and Exercise Weight Management: Short-Term Effects*"*, by R. L. Lt and A. Y. Loke, 2013. *Journal of Nutritional Disorders & Therapy*, *03*(01), https://doi.org/10.4172/2161-0509.1000121. Copyright 2013 by R.L. Lt and A.Y. Loke.

Methodology

This quantitative study was distributed to 349 pre-licensure nursing student participants from three northern New Mexico nursing sites to voluntarily complete demographic questions and a survey about their perceived academic self-efficacy (see Appendix A). Solberg's College Self-Efficacy instrument (Solberg et al., 1993) was utilized for this study. The purpose of collecting these data was to determine whether there were significant differences in the mean total perceived self-efficacy scores between Native American and non-Native American nursing students and also between nursing students who reported living (outside of school) in mostly urban or mostly rural areas.

Ethical Issues/Risk to Participants

Although participants were from vulnerable populations, i.e., the participants were students and some identified as Native American or other minority groups, the study was voluntary and participants chose whether to participate or answer all questions. The University of New Mexico IRB approved this study as an exempt category two designation (see Appendix B) and a letter of support for this study was obtained from Mary Owen, MD, Director of the Center of American Indian and Minority Health (see Appendix C). Student school locations were recorded only to determine participation rate by site. De-identified data and password protected computers protected participant anonymity, confidentiality, and privacy.

Data Collection Methods and Site Information

Study Setting

The Institutional Review Board (IRB) from the University of New Mexico (UNM) Health Sciences Center reviewed and approved this study (see Appendix B). Three university sites in northern New Mexico participated in the study: two pre-licensure nursing programs from rural areas and one pre-licensure nursing program from an urban area.

Study Population

The study population consisted of 349 pre-licensure nursing students who were in their first year of a two-year Associate Degree of Nursing (ADN) nursing program. Fifty-six participants agreed to be in the 2020 study. Participants were 18 years or older. Power analysis required a total of 30 Native American students, 30 rural students, and 75 comparison students across sites. Students self-identified their race and ethnicity and could include additional information about their: sex, home county (where they lived when school was out of session), home reservation or pueblo (when school was out of session), and language(s) other than English spoken at home.

Data Collection Process

Study data were collected and managed using REDCap (Research Electronic Data Capture) electronic data capture tools hosted at the University of New Mexico (Harris et al., 2009, Harris et al., 2019). REDCap is a secure, web-based application designed to support data capture for research studies, providing an intuitive interface for validated data entry, audit trails for tracking data manipulation and export procedures, automated export procedures for seamless data downloads to common statistical packages, and procedures for importing data from external

sources. The REDCap web platform emailed the survey to students and returned the de-identified survey data for analysis in aggregate. The survey was emailed a maximum of three times, every two weeks, to promote student participation (see Appendix D).

Survey Tool

Solberg's College Self-Efficacy instrument (Solberg et al., 1993) originally determined college self-efficacy and adjustment for Hispanic college students. Permission to utilize the instrument was obtained from Dr. Solberg (see Appendix E). Solberg defined college self-efficacy as, "a student's degree of confidence that they could successfully complete a given college-related task (e.g., taking notes, asking a question in class, etc.)" (Solberg et al., 1993, p. 80). This 19-item survey is a validated tool that focuses on course, social, and roommate self-efficacy areas. The 19 questions asked students, "how confident are you that you could successfully complete the following tasks?" (Solberg, 1993, p. 86). These tasks were: research a term paper, write course papers, do well on exams, take good class notes, keep up to date with schoolwork, manage time effectively, understand their textbooks, get along with roommate(s), socialize with roommate(s), divide space in apartment/room space, divide chores with their roommate(s), participate in class discussions, ask a question in class, get a date when they want one, talk to their professors, talk to university staff, ask a professor a question, make new friends at college, and join a student organization (Solberg et al., 1993, p. 88). Shorty recently modified and used this instrument for his doctoral study that explored academic stress and persistence in Navajo (Diné) college students (Shorty, 2018). Shorty's instrument (2018) removed four roommate interaction questions and three questions from social factors since less connected to academic self-efficacy (get a date, make new friends, join a student organization). Shorty's Cronbach Alpha was .87, which demonstrated the high reliability of the scale and test items.

The original study utilized a seven-point Likert scale (Appendix A). This study shortened the Likert scale to a five-point scale for more survey readability on cell phones and smaller computer screens, to simplify the participant survey experience, and to promote optimal data distribution. Participants ranked their perceived ability for these 12 questions from one (*not at all confident*) to five (*extremely confident*). Participants answered seven demographic questions and one free text comment field. Demographics questions were placed after the general survey questions to promote respondent completion. Branching logic allowed for respondents to answer questions that applied to them specifically, e.g., participants could enter a free text comment about their tribal affiliation if they indicated that they were American Indian or Alaska Native (see Appendix F). A free text comment field gave respondents the opportunity to provide additional information if desired: **"**Please provide any additional information about nursing student critical success factors that hasn't been asked or anything else that you would like to add."

Data Protection Measures

Data obtained from REDCap were de-identified and exported into SPSS for analysis. This study analyzed data in aggregate and did not contain any person-specific identifiable information. De-identified data from SPSS were also exported into an Excel file so that free text fields for race and ethnicity, home county, reservation or pueblo, language other than English, and the additional information comment fields could be coded for aggregate analysis. The Excel file was destroyed after analysis. Participation rates for each of the three sites were calculated from a blinded list of respondents who completed surveys in order to maintain confidentiality.

Timeline

The researcher completed the project on time and within budget. Starting on September, 14, 2020, 349 distributed surveys were sent to participants for survey completion. A total of 56 completed surveys were obtained on October 27, 2020. Data analysis was completed on December 2, 2020.

The timeline for this study was:

1. Planning and approval (June, 2019 – September, 2020)
    a. Obtained approval from the IRB to conduct study (See Appendix B)
    b. Created the data collection tool
    c. Obtained study sites
2. Data collection and analysis (September, 2020 – December, 2020)
    a. Collected data
    b. Statistical analysis with support team
    c. Interpreted results
3. Doctor of Nursing Practice Scholarly Project completed and presented by March, 2021.
4. Dissemination (April, 2021 and later)
    a. Poster presentation

Budget

This project did not require a budget or funding. Participants did not incur any costs or receive compensation for their participation. The researcher owned all tools used: computer, SPSS software, and Microsoft Office software. There were no other costs associated with this study.

Statistical Methods

Measures

These self-efficacy items and the total self-efficacy scores were considered interval levels of measurement. Nominal levels of measurement were identified for: sex, age, race and ethnicity, first generation college student, and other language at home variables. County urban and rurality was determined based on the U.S. Department of Agriculture definition of non-metro counties: "open countryside, rural towns (places with fewer than 2,500 people), and urban areas with populations ranging from 2,500 to 49,999 that are not part of larger labor market areas (metropolitan areas)" (U.S. Department of Agriculture, 2019).

Data Analysis

Descriptive statistics were used to analyze data frequencies and percentages from the study. The scale consisted of twelve academic self-efficacy items on a 5-point Likert scale ranging from one (not at all confident) to five (extremely confident) and adjusted to range from zero to four points for each item. The home county and reservation or pueblo home outside of school raw data variables were transformed into categorical versions and also run as frequency and percentages.

Self-efficacy total scores were calculated for the sum of the 12 self-efficacy variable scores with ranges from zero to 48. A reliability analysis was used to determine the Cronbach's alpha statistic for the interval level self-efficacy variables. Means and standard deviations were identified for each interval level self-efficacy variable on a scale of zero to five and for the total self-efficacy scores for all students on a scale of zero to 48.

Race and ethnicity groups were stratified into Native American and non-Native American groups. The raw data for the total self-efficacy score were analyzed to explore normality due to smaller sample sizes by exploring the shape of distribution in the histogram and

skewness/kurtosis. A Mann-Whitney *U* test was conducted to compare total self-efficacy score central tendencies for 56 Native American and non-Native American students, to compare total self-efficacy score central tendencies for 34 mostly rural and mostly urban students, and utilized the *z* statistic to look for any statistically significant differences. An online calculator was used to calculate Cohen's *d* effect size values for the Mann-Whitney *U* test and was calculated based on the *U* statistic to compare means. The Cohen's *d* effect sizes were defined as: "small" (.2), "medium" (.5), and "large" (.8). All statistical tests were two tailed.

Responses for the additional information comment field, "Please provide any additional information about nursing student critical success factors that hasn't been asked or anything else that you would like to add" were analyzed thematically and summarized.

Quality and Rigor

The study utilized a valid and reliable instrument. The questionnaire was administered at three academic settings in rural and urban areas to enhance the generalizability of findings. Native and non-Native American students were included in the study to compare mean total perceived self-efficacy scores for more than one group. To assure validity of the research design, the sample sizes at each research site needed to be large enough to establish whether there were correlations between the self- efficacy questionnaire results. A power analysis was performed and determined the target number of sample respondents for each site; however, did not meet the target.

Chapter 4

Results and Discussion

This study had a low participation rate (16%) and small sample size (N = 56). Thirty-eight of the 242 students at a large urban campus participated (16%), 10 of 85 students at a smaller mostly rural campus participated (12%), and eight of the 22 students at another mostly rural campus participated (36%). For the combined campuses, 26 students completed the survey during the first phase of distribution (7%), 17 students completed the survey during phase two (5%), and 13 students completed during phase three (4%).

Table 1: Demographic Characteristics (see Appendix G)

Eighty-six percent of the sample (N = 56) were women (n = 48), 12% were men (n = 7), and 2% identified as a different identity (n = 1). Most of the sample were young; 94% were between the ages of 19 to 29 years old (n = 40) and 30 to 45 years old (n = 13). The self-identified race and ethnicity percentages, in which it was possible to select multiple races and ethnicities, were: 5% American Indian or Alaska Native (n = 3), 4% Asian (n = 2), 0% Black or African American (n = 0), 2% Native Hawaiian or Other Pacific Islander (n = 1), 41% White (n = 23), 32% Hispanic or Latino (n = 18), 11% more than one race: non-Native (n = 6), and 5% more than one race: Native (n = 3).

Sixty-two percent of the respondents (n = 34) responded that when not going to school (out of session), they considered home to be in a county that was mostly urban (n = 21) and 38% responded that their home county was mostly rural (n = 13). Four percent of the sample (N = 56) indicated that when not going to school (out of session), they considered home to be on an Indian reservation or pueblo (n = 2). Twenty-nine percent of the sample (N = 56) were first-generation college students, i.e., the first in their family to attend college or the first in their family to earn a four-year degree (n = 16), 70% were not first-generation college students (n = 39), and 2% were

not sure whether they were first-generation college students (n = 1). Twenty percent of the sample (N = 56) indicated that they spoke a language other than English at home (n = 11) and 80% did not (n = 45).

Table 2: Self-Efficacy Characteristics (see Appendix H)

The Cronbach's alpha for the 12 self-efficacy items was .89. Respondents (N = 56) rated their perceived self-efficacy (level of self-confidence) for each characteristic on a zero (not at all confident) to five (extremely confident) Likert scale. Overall, they rated their ability to manage time effectively as the lowest score (M = 2.43, SD = 1.06) and highest score for writing course papers (M = 3.21, SD = .71). Other perceived self-efficacy characteristics included: researching a term paper (M = 2.86, SD = .80), doing well on exams (M = 2.61, SD = .91), taking good class notes (M = 2.80, SD = .86), keeping up to date with schoolwork (M = 3.00, SD = .95), understanding textbooks (M = 2.54, SD = .85), participating in class discussions (M = 3.00, SD = .97), asking a question in class (M = 2.82, SD = 1.24), talking to their professors (M = 3.16, SD = 1.02), talking to college staff (M = 2.91, SD = 1.01), and asking a professor a question (M = 3.13, SD = .97). On a scale of zero to 48, the total perceived self-efficacy score for all students was quite high (M = 34.43, SD = 7.62). The total perceived self-efficacy scores histogram show data negatively skewed with skewness of -0.67 (SE = 0.32) and kurtosis of -0.21 (SE = 0.63).

Table 3: Total Self-Efficacy By Native American and Non-Native American Demographics and Rurality (see Appendix I)

A Mann-Whitney U test revealed no significant difference (z = .04) in the total scores for perceived self-efficacy (N = 56) for Native American (M = 34.50, SD = 7.34) and non-Native American students (M = 34.42, SD = 7.72). Similarly, total self-efficacy scores revealed no significant difference (z = -.89) for mostly rural (M = 36.67, SD = 8.78) and mostly urban

students (M = 35.48, SD = 7.41). Negligible effect sizes were observed for Native American and non-Native American students (Cohen's d of .01) and rurality (Cohen's d of .30). Thus, the null hypothesis was retained.

Thematic Analysis for Nursing Student Critical Success Factors Comments

Eleven of the 56 respondents (19.6%) shared information in the nursing student critical success factors comment field that they perceived influenced nursing student critical success. The following thematic categories were identified and include summaries of their perceptions and experiences.

Course Instructor and Program Support

- Student expressed gratitude for being in a program that student perceived prepares students well for the NCLEX exam.
- Student lacked self-confidence/efficacy as a result of perceived ability of professors to answer questions and lack of follow-through for answers in some classes.
- Student reported illogical task instruction and frustrating test questions.
- Student felt that unorganized teachers impacted students' organizational skills and ability to keep up with schoolwork.
- Student reported a lack of advisement/counseling resources which negatively impacted confidence with academic success.

Course Format and Resources

- Resources such as Internet access and libraries impacted student self-confidence/efficacy.
- Student reported difficulty focusing during lectures. This student may have had difficulty with lecture formats, but could have been due to other life/global circumstances inhibiting the ability to focus in school in general.

- One student indicated that their survey responses pertained to the online experience during that timeframe. It can be inferred that the student's self-efficacy perceptions might have been different if they had been in a face-to-face academic program and/or had different technology requirements or supports.

Financial Challenges and Balancing Work/Life

- One student reported multiple roles that they were juggling, limited support with home and school responsibilities, and child care costs. It can be inferred that the student desired more financial and childcare resources to feel more successful in school.
- One student reported frustration with many nursing program expenses and having financial issues. A student dissatisfier may be requiring the purchase of an online modality during the pandemic when perhaps they preferred a face-to-face educational experience.

Interpretation of Findings

These results indicated that there was no significant difference in nursing students' perceived academic self-efficacy, regardless of whether they self-identified as being Native American or non-Native American nor whether they self-identified as living in a mostly rural or mostly home county. While there was no significant difference in perceived academic self-efficacy, there might be differences in actual academic success, however, this study does not investigate those outcomes. Findings should be interpreted with caution due to the small sample size and limited generalizability since this study consisted of three northern New Mexico pre-licensure nursing programs and was performed during the first year of a global pandemic. Thematic analyses of the nursing student critical success factors comment field showed that students perceived that their academic success was impacted by these factors: course instructor

and program support, course format and resources, financial challenges, and balancing work and life.

Discussion

Implications for Practice

Academic Supports

This study reaffirmed the fact that nursing programs need to provide personalized supports for pre-licensure nursing students. Colleges and universities should have strategic plans that address a myriad of potential student challenges: broadband issues, childcare needs, technical skill limitations, math or writing skill limitations, multilingual support needs, and inequities in accessibility to nursing programs and/or transportation issues related to rurality or other structural inequality issues. Academic institutions can utilize the Academic Self-Efficacy Scale (Bulfone et al., 2020) to personalize supports provided to nursing students based upon their self-efficacy scores. Faculty can assess student challenges and develop action plans to prevent attrition by utilizing a "Growth Form." This form identifies issues in areas of "growth, readiness, opportunity, work, and time management (Lewis et al., 2019, p. 174).

This study underscored the need for optimal program support, academic staff support, and faculty support for all students. Well organized nursing programs should have adequate levels of staff and faculty and offer curriculums that meet American Association of Colleges of Nursing (AACN), Commission on Collegiate Nursing Education, and other nursing program guidelines. Students need access to library, writing, math, and technology resources. Faculty and students should discuss students' experiences and confidence levels with writing, math, and computer/technology skills (Bagnasco et al., 2016; Johnson & Rulo, 2018; Landzelius, 2006; Tyndall & Scott, 2017). Nursing programs also need to build competencies into the curriculum

that help students improve persistence, resilience, emotional intelligence, time management, and academic adaptation skills.

Students must have program advisory, counseling, and mentoring support, knowledge of financial aid options, and the skills to balance their work, home, and school demands. Ideal educational models include individualized academic coaching, financial aid opportunities, and contribute to nursing students' sense of belonging and growth mindsets (Connelly et al., 2019; Williams, 2018). All students have basic academic requirements: effective rubrics and task instructions, posted faculty office hours and scheduling flexibility, equitable grading, and provision of feedback and responses to student concerns in a timely fashion. Cognitive fatigue, emotional and physical demands, and serious illness during the pandemic and other difficult periods of time during students' academic journeys may require additional behavioral health, healthcare, and course/program flexibility support and resources. Nursing programs need to anticipate and ameliorate any potential challenges that students may have with different course formats, e.g., face-to-face, clinical, simulation, and online platforms. Hybrid online and face-to-face modalities are ideal for students (Hsu & Hsieh, 2011).

Emotional intelligence may be a better predictor of success than entrance exams (Sharon & Grinberg, 2018). Nursing programs need to understand students' levels of emotional intelligence and develop their emotional intelligence growth. Students' abilities to overcome challenges and utilize resources, i.e., grit, is critical for their clinical and academic success (Terry & Peck, 2020).

Students may perceive that they have high academic self-efficacy and feel confident when entering their programs, but that perception may not be the sole predictor of their eventual

academic success. Nursing programs also need to look at other academic outcomes to comprehensively understand and support the student experience.

Recruitment and retention of all nursing students, nursing program faculty, and staff is paramount to address our countries' healthcare demands. Nursing programs particularly need more initiatives to recruit and retain URM students, nursing program faculty, and staff to increase community healthcare diversity, equity, and inclusion and improve healthcare outcomes. Nursing programs can promote nursing diversity and cultural competency by having positive academic climates, providing programs that prepare students for college, and providing supports for social, cultural, and emotional needs. Mentorship, institutional leadership, and support are important nursing faculty retention factors (Lee et al., 2017). Recruitment and retention of nursing faculty also requires inclusive academic milieus, particularly to support faculty of color (Hamilton & Haozous, 2017). Employee resource groups are excellent opportunities to advance diversity, equity, and inclusion in academic settings.

Native American Critical Success Factors

There is a limited skilled Indigenous workforce due to education and employment inequity (Landzelius, 2006). It is advised that nursing programs understand critical success factors and for Native American students in order to meet educational needs, improve nursing education outcomes, and overcome health disparities in rural areas. Academic staff working with Native American students should be aware of negative experiences at boarding schools sustained by Indigenous peoples in the past and the historical trauma that resulted from these and other social injustices (Lane & Petrovic, 2018). Native Americans are restoring education after colonialism and genocide (Nee-Benham & Cooper, 2000).

Dr. Shawn Secatero recommends holistic Native American pedagogical frameworks for academic persistence and success that incorporate spiritual, cultural, professional, social, mental, emotional, physical, and environmental components (Shotton & Waterman, 2013). Curriculums should combine both Indigenous and Western/European concepts (Minthorn et al., 2018) and courses should be mapped to competencies that meet nursing and cultural competencies so that educational, sociocultural, and workforce needs can be met. Courses should also be offered in native languages to increase understanding and build self-esteem (Nee-Benham & Cooper, 2000). Educational enculturation is necessary in academic settings and requires cultural competency (Cajete, 1999). There are many tribes and languages. Native Americans exist now, will exist in the future, and should not be referred to in the past tense. Mascots should be culturally appropriate. Students may have special religious ceremonies and other community obligations and commitments that require academic flexibility. Academic staff can work collaboratively with students to mentor and support them, understand their culture and communication styles, and promote better educational opportunities and outcomes than were prominent in the past.

Many Native American students do not graduate from high school (Cajete, 1999), but academic institutions and mentors from the community can inspire students in high school to graduate and to consider careers in health professions. Academia can then provide supports in areas of advisement, technology, financial aid, and emotional and social supports during their college and university experiences. Programs such as College Horizons (College Horizons, n.d.) provide pre-college advisement and help Native American student adjustment to college (Waterman & Shotton, 2018). Experiential experiences are optimal for Native American students (Wilson, 2008) and can be expanded beyond nursing clinicals. Native American students in rural

locations often have broadband and Internet access issues (Brayboy et al., 2012) and academic institutions can collaborate with local communities to expand broadband and provide other technology supports. Scholarships such as those available at Montana State University for Native American nursing students (Native News Online, 2020) and other financial aid opportunities should be available and communicated to staff and students (Connelly et al., 2019; Minthorn et al., 2018). Since emotional and social supports are instrumental for student success, academic institutions can provide opportunities for peer, family, and instructor interactions such as clubs, diversity and inclusion events, special programs, and celebrations.

It is urgent that academia and community advocacy and leadership focuses on increasing the number of TCUs in rural and reservation/pueblo communities and expanding them to include more BSN and other nursing programs**.** The involvement of tribal liaisons and other support staff for URM students will indubitably improve graduation rates, NCLEX pass rates, and post-graduation job placement (Butler et al., 2018; Waterman & Shotton, 2018).

Nursing Education Policy

Policy development should focus upon nursing education access equity and quality. Cultural competency training should be more available for educators**.** Academic institutions and local communities should work collaboratively to provide more opportunities for students to go to school and complete their nursing clinicals in their home communities. It is beneficial to have academic community relations liaisons who advocate for underrepresented students to pursue their educational goals. AACN recommends and provides holistic admissions review training for nursing programs to promote faculty, staff, and student diversity (American Association of Colleges of Nursing, 2020). Colleges and universities should develop graduation rate and NCLEX pass rate outcome targets. Assistance with job placement after graduation should be

available for all students. More funding should be available for nursing education, nursing research, and for student grants and scholarships.

Strengths and Limitations of the Study

Strengths This study was one of the first quantitative studies that explored perceived academic self-efficacy of pre-licensure nursing students. The main study strengths were the use of a reliable and valid instrument with high internal validity at three academic sites. All participants received the same survey, which minimized researcher bias. Participants had three opportunities to complete the survey over a six-week time period during their Fall semester. Data analysis of the free-text comments addressed gaps in literature about their academic experiences and opinions about critical success factors that impacted their academic success.

Limitations The greatest study limitation was the small participation rate primarily due to the pandemic which impacted students' ability to complete the survey. Many students in the southwest were unable to attend school, e.g., students from Navajo Nation, who were catastrophically affected by Covid-19. External validity is limited since this study included a convenience sample of primarily White female nursing students from northern New Mexico, from mostly urban home counties, and four of the five respondents who indicated their tribe were from southwestern tribes. Because rurality was self-reported and many respondents incorrectly indicated that their home county was the United States, findings are not a true representation of students' actual home rurality.

Suggestions for Further Research

This study could be performed longitudinally at other pre-licensure nursing programs. Perceived self-efficacy could be compared to measures of actual academic success such as graduation rates, NCLEX pass rates, attrition, and career integration outcomes. Future nursing

program studies should incorporate the Academic Self-Efficacy Scale instrument (Bulfone et al., 2020). Ideally, a qualitative component or Q methodology design could be incorporated to further explore Native American student and urban and rural student experiences. Future studies should also include participants' tribal identities and languages other than English spoken at home in order to determine whether there are significant differences between participants from different tribes and/or any differences for participants who speak English as an additional language. More studies need to explore online and simulation course experiences, expand nursing self-efficacy studies to investigate culture/ethnicity, explore BSN and graduate school experiences and student supports needed, measure nursing program student satisfaction, and explore academic experiences of students from other tribes and areas of country.

Concluding Remarks

An understanding of nursing students' academic experiences will help to determine how to best support students individually, provide optimal learning, and enhance outcomes. There are opportunities for academic achievement improvement by mitigating barriers to learning and improving student success supports, particularly for URM students. This study adds to the research by providing information about Native American and non-Native American pre-licensure nursing students' perceived academic self-efficacy and critical success factors. This study aligns with other studies that found that students' motivation and commitment to their education may impact their academic success more than their demographics (Beck & Milligan, 2014; Perfetto, 2019). The application of information from this study will improve student outcomes and result in better healthcare. This is particularly vital in rural and reservation communities, as evident in the recent pandemic. Measures are recommended that faculty, staff,

and administrators of prelicensure nursing programs can take to promote student success and recommended further research and health policy improvements in this area.

These study findings and recommendations are particularly applicable when working with vulnerable populations such as Native American students and/or other students from remote, reservation, and/or pueblo communities. Enhancing educational opportunities for Native American nursing students aligns with tribal nation building initiatives of providing community education and employment (Brayboy et al., 2012) which will ultimately improve healthcare in rural and reservation communities. Promoting the academic success of all nursing students impacts the healthcare of an entire nation.

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Appendix A Survey and Demographic Questions

Solberg's College Self-Efficacy Instrument-Modified (Solberg et al., 1993)

Assuming that you are motivated to do your best, please indicate how confident you are that you could successfully do the following tasks.

How confident are you that you could:

	Not at All				Extremely Confident
1. Research a term paper	**1**	**2**	**3**	**4**	**5**
2. Write course papers	**1**	**2**	**3**	**4**	**5**
3. Do well on your exams	**1**	**2**	**3**	**4**	**5**
4. Take good class notes	**1**	**2**	**3**	**4**	**5**
5. Keep up to date with your schoolwork	**1**	**2**	**3**	**4**	**5**
6. Manage time effectively	**1**	**2**	**3**	**4**	**5**
7. Understand your textbooks	**1**	**2**	**3**	**4**	**5**
8. Participate in class discussions	**1**	**2**	**3**	**4**	**5**
9. Ask a question in class	**1**	**2**	**3**	**4**	**5**
10. Talk to your professors	**1**	**2**	**3**	**4**	**5**
11. Talk to college staff	**1**	**2**	**3**	**4**	**5**
12. Ask a professor a question	**1**	**2**	**3**	**4**	**5**

Free text comment field

Please provide any additional information about nursing student critical success factors that hasn't been asked or anything else that you would like to add.

What gender do you identify as?

□ Male
□ Female
□ Different Identity: _____
Please describe your gender identity: _____
□ Prefer not to answer

How old are you?

□ Under 18 years
□ 19 to 29 years
□ 30 to 45 years
□ 46+
□ Prefer not to answer

Please specify your race or ethnicity (select all that apply)

□ American Indian or Alaska Native

Tribal affiliation (Please specify): _____
□ Asian
□ Black or African American
□ Native Hawaiian or Other Pacific Islander
□ White
□ Hispanic or Latino
□ Prefer not to answer

When not going to school (out of session), I consider home to be in this county:

(Please specify): _____)

When not going to school (out of session), I consider home to be on an Indian reservation or Pueblo:
□ Yes
Which Indian reservation or Pueblo? (Please specify): _____
□ No

Are you the first in your family to attend college or the first in your family who will earn a four-year degree (a first-generation student)?

□ Yes
□ No
□ Not sure
□ Prefer not to say

Do you speak a language other than English at home?

□ Yes
What is this language? (Please specify): _____
□ No
□ Prefer not to say

Appendix B IRB Exempt Category 2 Documents and Approval

Documents Approved/Acknowledged:	• HRP-583 - Exempt Category 2 Protocol v7.15.19 Nielsen 042420(1).pdf • Letter of Support NMNAINA 041020.pdf • Final Demographic Questions 030820.pdf • Nielsen Self Efficacy Instrument 042320.pdf • Solberg Approval 112019.pdf • Letter of Support Center of American Indian and Minority Health w letterhead.pdf • Email Followup Script to Invite Participants Nielsen 051420 v2.0.pdf • Email Recruitment Script to Invite Participants 051420 v2.0.pdf • Nielsen_Karen HRP-507a-UNM-Consent_Survey-Research 051420 v2.0.pdf
Review Category:	EXEMPTION: Categories (2)(i) Tests, surveys, interviews, or observation (non-identifiable)
Determinations/Waivers:	Provisions for Consent are adequate. HIPAA Authorization Addendum Not Applicable.
Submission Approval Date:	5/27/2020
Approval End Date:	None
Effective Date:	5/27/2020

Appendix C Center of American Indian and Minority Health's Letter of Support

UNIVERSITY OF MINNESOTA

Duluth Campus

Center of American Indian and Minority Health
Medical School Duluth

1035 University Dr
Duluth, MN 55812
Office: 218-726-7235
Fax: 218-726-8948
www.caimh.umn.edu
Email: caimh@d.umn.edu

April 30, 2020

Dear UNM IRB:

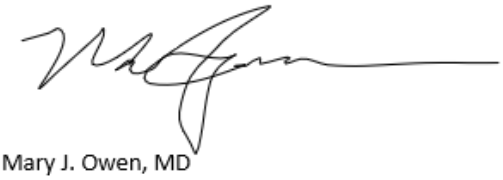
This letter indicates the Center of American Indian and Minority Health's support of the DNP scholarly project proposed by Karen Nielsen MSN, RN-BC, entitled, ""Critical Success Factors for Native American and non-Native American Pre-licensure Nursing Students in Northern New Mexico."

This study will explore perceived critical success factors for Native American and non-Native American pre-licensure nursing students in Northern New Mexico, discuss academic experiences shared by students, recommend measures that faculty, staff, and administrators of prelicensure nursing programs can take to promote student success, and recommend further research and policy. The study will also identify differences in academic self-efficacy between rural and nonrural nursing students in Northern New Mexico.

We support Karen Nielsen's plan to conduct this proposed project.

Please feel free to contact us at 218-726-7235 or mjowen@d.umn.edu for any additional questions or concerns.

Sincerely,



Mary J. Owen, MD
Director, CAIMH
Endowed Professorship, American Indian Health
Assistant Professor, Dept. of Family Medicine and Biobehavioral Health

Appendix D Recruitment and Communication Plan

Project

Identified pre-licensure nursing students at the San Juan College/UNM in Farmington, NM, the University of New Mexico in Albuquerque, and the University of New Mexico in Gallup will be invited to complete an online survey that looks at critical success factors for nursing students. The survey will take students approximately fifteen minutes to complete. Participants will not receive an incentive for participation in the study.

Recruitment

Email scripts are included in this document. Following the initial recruitment email, a reminder email will be sent at one week, two weeks, and at four weeks to students who have not yet participated in the survey. All consents, emails, and surveys will be managed via REDCap which is a secure, research database.

Participation

Participants will sign the informed consent, then complete a twelve (12)-question survey, a seven (7)-item demographic questionnaire, and one (1) free text comment field. The survey will take no longer than twenty (20) minutes to complete electronically. REDCap assigns a number to each participant, and that number will be the only identified thus protecting participant anonymity. The survey will be sent with the reminder email to students who did not complete the initial survey at one week, two weeks, and at four weeks.

Once all data has been analyzed, it will be electronically stored until May, 2021 when it will then be destroyed.

Critical Success Factors for Nursing Students
Informed Consent Cover Letter for Anonymous Survey

STUDY TITLE
Perceived Critical Success Factors for Native American and Non-Native American Pre-licensure Nursing Students in Northern New Mexico

Dr. Cole, DNP, MSW, RN-BC, NEA-BC, FACHE from the UNM College of Nursing, and Karen Nielsen, MSN, RN-BC, DNP student from the UNM College of Nursing are conducting a research study. The purpose of the study is to explore critical success factors for nursing students. You are being asked to participate because you are a nursing student in New Mexico.

Your participation will involve completion of a study survey. The survey should take about 15-20 minutes to complete. The survey includes 12 questions such as "how confident are you that

you could do well on your exams?" and "how confident are you that you could write course papers?" and also a comment field to provide any other information that you would like to share. Your involvement in the research is voluntary, and you may choose not to participate. You can refuse to answer any of the questions at any time. There are no names or identifying information associated with your responses. There are no known risks in this research, but some individuals may experience discomfort when answering questions. Data will be de-identified automatically and immediately by the secure web application once the once survey has been completed. Your information collected for this project will NOT be used or shared for future research, even if we remove the identifiable information like your name or date of birth.

The findings from this project will provide information on critical factors that promote nursing student academic success. If published, results will be presented in summary form only.

If you have any questions about this research project, please feel free to call Dr. Melissa Cole, who is the Principal Investigator of the study, HRRC study number 20-277 at (505) 400-1681 or Karen Nielsen, co-researcher, at (970) 403-2296. If you have questions regarding your legal rights as a research participant, you may call the UNM Human Research Protections Office at (505) 272-1129.

By completing this online survey, you will be agreeing to participate in the above described research study.

Thank you for your consideration.

Sincerely,

Karen Nielsen
College of Nursing DNP Student

Script for Email Recruitment for Nursing Student Critical Success Factors Survey

Hello!

I am emailing you as a University of New Mexico Doctor of Nursing Practice (DNP) student. I am inviting you to voluntarily participate in nursing research that will explore critical success factors for nursing students because you are a nursing student at the University of New Mexico. Your involvement in the study will include completing a 15 to 20-minute secure online survey. Your name and any other distinguishing information will be de-identified. In the future, the student investigator will use these data for a Capstone final paper and a poster presentation. We will submit the final project for publication. There are no costs associated with the study except the time to complete the survey.

The results from this study will help to promote nursing student success! Now, more than ever, this information is so helpful.

If you have any questions, please do not hesitate to reach out.

Thank you for your consideration and help with this study.

Respectfully,

Karen Nielsen, MSN, RN-BC

If you have any questions about this research project, please feel free to call me at (970) 403-2296 or Melissa Cole, DNP, MSW, RN-BC, NEA-BC, FACHE who is the Principal Investigator of the study, HRRC study number 20-277 at (505) 400-1681. If you have questions regarding your legal rights as a research participant, you may call the UNM Office of the IRB at (505) 277-2644.

Script for Email Follow-up for Nursing Student Critical Success Factors Survey

Hello!

I am emailing you, as a reminder of the opportunity to participate in nursing research, *Critical Success Factors for Nursing Students.*

You are invited to voluntarily participate in this study because you are identified as a nursing student at the University of New Mexico. Your involvement in the study will include completing a 15 to 20-minute secure online survey. Your name and any other distinguishing information will be de-identified.

The results from this study will help to promote nursing student success! Now, more than ever, this information is so helpful.

If you have any questions, please do not hesitate to reach out.

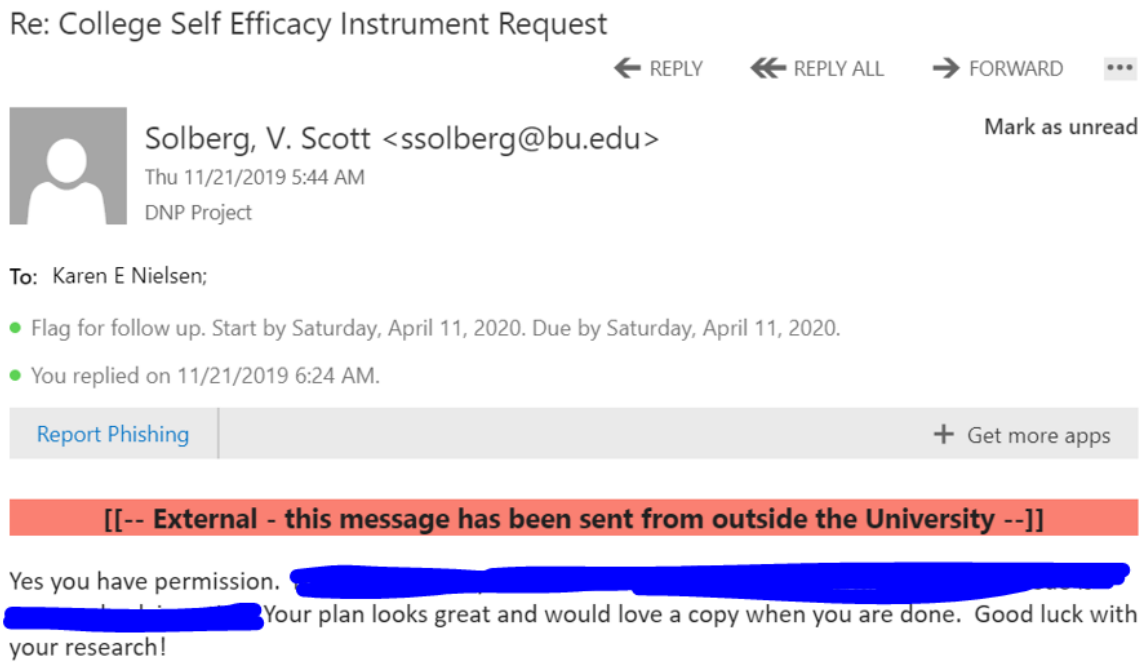
Thank you for your consideration and help with this study.

Respectfully,

Karen Nielsen, MSN, RN-BC

If you have any questions about this research project, please feel free to call me at (970) 403-2296 or Melissa Cole, DNP, MSW, RN-BC, NEA-BC, FACHE who is the Principal Investigator of the study, HRRC study number 20-277 at (505) 400-1681. If you have questions regarding your legal rights as a research participant, you may call the UNM Office of the IRB at (505) 277-2644.

Appendix E Dr. Scott Solberg Instrument Approval



Re: College Self Efficacy Instrument Request

REPLY REPLY ALL FORWARD ...

Solberg, V. Scott <ssolberg@bu.edu>

Mark as unread

Thu 11/21/2019 5:44 AM

DNP Project

To: Karen E Nielsen;

- Flag for follow up. Start by Saturday, April 11, 2020. Due by Saturday, April 11, 2020.
- You replied on 11/21/2019 6:24 AM.

Report Phishing | + Get more apps

[[-- External - this message has been sent from outside the University --]]

Yes you have permission. [redacted] Your plan looks great and would love a copy when you are done. Good luck with your research!

Appendix F Demographic Questions in REDCap

Demographics

What gender do you identify as?

- ○ Male
- ○ Female
- ○ Different Identity
- ○ Prefer not to answer

rese

How old are you?

- ○ Under 18 years
- ○ 19 to 29 years
- ○ 30 to 45 years
- ○ 46+
- ○ Prefer not to answer

rese

Please specify your race or ethnicity (select all that apply)

- ☑ American Indian or Alaska Native
- ☐ Asian
- ☐ Black or African American
- ☐ Native Hawaiian or Other Pacific Islander
- ☐ White
- ☐ Hispanic or Latino
- ☐ Prefer not to answer

Tribal affiliation (Please specify):

When not going to school (out of session), I consider home to be in this county (Please specify):

When not going to school (out of session), I consider home to be on an Indian reservation or Pueblo:	◉ Yes ○ No
Which Indian reservation or Pueblo? (Please specify):	
Are you the first in your family to attend college or the first in your family who will earn a four-year degree (a first-generation student)?	○ Yes ○ No ○ Not sure ○ Prefer not to say
Do you speak a language other than English at home?	◉ Yes ○ No ○ Prefer not to say

Additional Information

Please provide any additional information about nursing student critical success factors that hasn't been asked or anything else that you would like to add.	

Appendix G Table 1

Demographics (N = 56)

Characteristic	*n*	*%*
Gender		
Female	48	86
Male	7	13
Different Identity	1	2
Age		
Under 18 years	0	0
19 to 29 years	40	71
30 to 45 years	13	23
46+ years	3	5
Prefer not to answer	0	0
Race and Ethnicity [a]		
American Indian or Alaska Native	3	5
Asian	2	4
Black or African American	0	0
Native Hawaiian or Other Pacific Islander	1	2
White	23	41
Hispanic or Latino	18	32
More than one race: Non-Native	6	11
More than one race: Native	3	5
Prefer not to answer	0	0
Home County [b]		
Mostly urban	21	62
Mostly rural	13	38
Home Outside of School		
Reservation or Pueblo	2	4
Not on a Reservation/Pueblo	54	96

First Generation College Student		
Yes	16	29
No	39	70
Not sure	1	2
Other Language At Home		
Yes	11	20
No	45	80

[a] It was possible to select multiple race and ethnicities.

[b] There were also 22 invalid responses for home county.

Appendix H Table 2

Self-Efficacy Characteristics (N = 56)

Self-Efficacy Scores (0-4 Scale)	*M*	*SD*
Research a term paper	2.86	.80
Write course papers	3.21	.71
Do well on exams	2.61	.91
Take good class notes	2.80	.86
Keep up to date with schoolwork	3.00	.95
Manage time effectively	2.43	1.06
Understand your textbooks	2.54	.85
Participate in class discussions	3.00	.97
Ask a question in class	2.82	1.24
Talk to your professors	3.16	1.02
Talk to college staff	2.91	1.01
Ask a professor a question	3.13	.97

	M	*SD*
Total Self-Efficacy Score For All Students (*n* = 56)	34.43	7.62

Appendix I Table 3

Total Self-Efficacy by Native American and Non-Native American Demographics and Rurality (N = 56)

Total Self-Efficacy Score (0-48 Scale)	*n*	*M*	*SD*	*z*	Cohen's *d*
				.04	.01
Native American	6	34.50	7.34		
Non-Native American	50	34.42	7.72		
				-.89	.30
Mostly Rural	13	36.67	8.78		
Mostly Urban	21	35.48	7.41		

$^{*}p < .05$, $^{**}p < .01$, ***p < .001.