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Minority Nursing Students and Increasing NCLEX Pass Rates: Support Program Intervention

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MINORITY NURSING STUDENTS AND INCREASING NCLEX PASS RATES: SUPPORT

PROGRAM INTERVENTION

An Evidence-based Practice Capstone Project

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Title of Capstone Project: Minority Nursing Students and Increasing NCLEX Pass Rates:

Support Program Intervention

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Abstract

Background: There is growing evidence for the need to increase the minority nurse workforce to mirror the growing minority population in the United States. Health disparities among the minority population may be alleviated by having more minority nurses in the community. The purpose of the project was to examine increasing minority nurses in the workforce through comprehensive support programs at schools of nursing.

Methods: In this evidence synthesis project, a comprehensive literature review was done using CINAHL, ERIC, and PubMed databases with search terms including NCLEX-RN, diversity, minority, licensure, and retention. A total of 13 articles were screened and 5 articles meeting inclusion criteria were critically appraised. The support programs included interventions in academic, social, and financial components. Using the Johns Hopkins Research Critique tool, all the studies were rigorously evaluated. NCLEX-RN licensure exams first time pass rates were compared as a measure of success for the support programs.

Results: The results are inconclusive due to lack of quality research and limited data on this subject. Only one study out of the five supported the intervention to increase NCLEX-RN first time pass rates.

Implications: The financial costs associated with these programs question the sustainability of these interventions. Comprehensive support programs are necessary for minority students to be successful. Research with increased rigor is needed on this topic.

   Key Terms: Diversity, minority, NCLEX-RN, licensure

DEDICATION

I dedicate my capstone project for my family, friends, colleagues, and mentors who supported, encouraged, and provided me wisdom to complete this task. Thank you all for your love and patience. This project is also dedicated to all nurses of every ethnicity. The universal language of respect and kindness is shared amongst us all.

"Nursing is an art: and if it is to be made an art, it requires an exclusive devotion as hard a preparation, as any painter's or sculptor's work; for what is the having to do with dead canvas or dead marble, compared with having to do with the living body, the temple of God's spirit? It is one of the Fine Arts: I had almost said, the finest of Fine Arts." ~Florence Nightingale

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CHAPTER I

INTRODUCTION

Problem Statement

The challenge to increase minorities in the nursing workforce to combat health disparities associated in ethnic populations has reached a critical threshold. The United States Census Bureau projects a minority population growth of 54 percent by the year 2043 in the Hispanic, Asian, and African American communities (U.S. Census, 2012). The Institute of Medicine's (IOM), *Unequal Treatment: Confronting Racial and Ethnic Health Disparities* (2003), reported that health disparities among ethnic populations are correlated with poor socioeconomic status, language barrier, cultural barrier, no access to healthcare, and healthcare provider bias. This inequality has important consequences for health outcomes. African American women's mortality rates are forty percent higher than White Non-Hispanic patients from breast cancer (CDC, 2013). Sixty percent more African Americans will suffer a stroke and die than White Non-Hispanics (CDC, 2013). Heart disease rates are 40% higher for the Hispanic population than compared to the White Non-Hispanic population (CDC, 2013).   To change the health disparity among minority communities, minority healthcare providers are needed to help with language and cultural barriers, provide access to ethnic communities, and to decrease healthcare provider bias (CDC, 2013).

Background and Need

The idea that health care providers of the same race are needed to provide care for the minority population has been debated for two decades (Jerant, Bertakis,, Fenton, Tancredi & Franks, 2011). Racial concordance theory hypothesized that if two entities have similar racial characteristics it will lead to commonality in communication, cultural, and thought styles which

may yield better outcomes (Jerant et al, 2011). Meghani et al. (2009) and Jerant et al.(2011) provided literature reviews on racial concordance and found there is not enough evidence to conclude that there is a relationship between racial concordance and positive health outcomes. In spite of these findings, racial concordance may address some health disparities by having the ability to speak the language, observe culturally competence, increase trust among minority communities, and advocate for the populations they serve (CDC, 2013). With a future minority population explosion, increasing diversity in the nursing workforce is critical.

According to the 2013 survey conducted by the National Council of State Boards of Nursing (NCSBN) and The Forum of State Nursing Workforce Centers, minority nurses represent 19% of the registered nurse (RN) workforce (AACN, 2015). Of the 19%, African-American nurses 6%, Asian nurses 6%, and Hispanic 3%. With an expected minority population growth of 50% by 2043, minority nurses will be out- numbered and not reflect the changing demographics of the United States Population (AACN, 2015). The IOM Report: *Assessing the Future of Nursing* (2015), also conveyed a disproportionate representation of minority nurses in the United States and a plan to increase minority nurses at the bedside. Schools of nursing (SON) have dedicated program development to increase diversity. Support from the government, National League of Nursing (NLN), American Association of the Colleges of Nursing (AACN), and Health Resources and Services Administration (HRSA) Diversity Nursing Workforce Program provided grants and financial compensation for the SON to implement their programs.

To successfully deploy student nurses into the workforce, they must complete a nursing program and pass the Nursing Council Licensure Exam – Registered Nurse (NCLEX-RN[©]). The NCLEX-RN[©] is an exam that provides state licensure to student nurses allowing them to practice legally. Another important element of the NCLEX-RN are first-time pass rates. For

accreditation purposes, nursing schools are to maintain an 80% first time pass rate to be eligible for accreditation (CCNE, 2013). Many SON have support programs in place to prepare students for the NCLEX-RN[©].

Significance To Nursing Education

The challenges that affect NCLEX-RN[©] pass rates and completion of a nursing program among minority nursing students are categorized into three sections: academic, social, and financial. Historically, minority students have high attrition rates and low first time NCLEX-RN[©] pass rates compared to the dominant ethnic culture in nursing programs: female and White Non- Hispanic (Cowan, Weeks, & Wicks, 2015). Lockie (2013) compared White and Black students NCLEX-RN pass/fail rates via chi-square analysis. The statistical significance ($p = .008$), with 84.6% ($n = 99$) of White students passing NCLEX-RN[©] on the first time compared to 66.7% ($n = 32$) of Black students (Lockie, 2013). Nurse educators may ask, how can we change these NCLEX-RN pass rates to achieve improved racial diversity in the workforce? Could there be other factors for low NCLEX-RN pass rates among minority students?

The nursing discipline are not the only ones challenged by licensure exam. Other disciplines such as education and pharmacy programs also have low licensure pass rates among minority students (Chisholm-Burns et al., 2014). Elpus (2015) reported high failure rates on the Teacher Praxis licensure among minority teaching students, specifically in the African American, Asian, and Hispanic populations. White students who passed the Praxis passed 85.8% compared to Black students who passed at 41.7% (Elpus, 2015). Communities that lack minority teachers have reported lower student academic outcomes, lack of role models for minority students, and a disproportionate representation of the community (Elpus, 2015). In Pharmacy programs, students are required to take the North American Pharmacist Licensure

Examination (NALPX) for licensure (Chisholm-Burns et al., 2014). Chisholm-Burns et al. reported White Non-Hispanic students (p<0.001) statistically performed higher than African American (p=0.005) and Asian students (p= 0.012) (2014). Similar problems arise in communication and trust among the minority population and the lack of minority pharmacists. Questions arise if licensure exam are biased toward minorities and may need further sensitivity testing. Without passing these licensure exams, increasing minority teachers, pharmacists and nurses further widens the gap for growth among healthcare providers and ethnic communities.

Minority nurses can provide minority patients accessibility to healthcare by being advocates, a trusted resource, and provide culturally competent care that will decrease health disparities (Condon et al., 2013). To increase minority nurses in the United States, SON have developed comprehensive programs for minority students. Condon et al. (2013) provided a questionnaire to a group of 77 students to identify the needs for minority students. The results of the questionnaire consisted of needs for financial assistance, family support, and academic tutoring. Colville et al., (2014), Gordon and Copes (2010), Almeida et al., (2011) echoed similar needs for their minority students in their support programs. Support programs were developed around these factors academic, financial, and social support needs for minority students (Colville, Cottom, Robinette, Wald, and Waters, 2014; Condon, Morgan, Miller, Mamier, Zimmerman, and Mazhar 2013; Gordon & Copes, 2010; and Almeida, Prive, Davis, Landry, Renwanz-Boyle, and Dunham, 2011).

Support programs for minority nursing students are limited to 21 states in the United States (IOM, 2015). Some of the programs provided a social worker, program liaison, tutor, and many nurse educators to address barriers in academic, social, and financial needs. Some programs started interventions as early as middle school to prepare students for nursing school

(Condon et al., 2013; Colville, et al., 2014; Gordon & Copes, 2010). The Success in Learning: Individualized Pathways Program (SLIPP) reported a 90.9% graduation rate and a 98.6% NCLEX-RN pass rate (Condon et al., 2013). The RN achievement program from the Community College of Allegheny County in Pittsburgh reported an NCLEX-RN pass rate of 87.5% and a graduation rate over 85% (Colville, 2014). The programs have demonstrated effectiveness in recruiting and retaining nursing students but not necessarily increasing first time pass rates of the NCLEX-RN[©].

Evidence Based Question

The purpose of this evidence synthesis study is to explore current literature on NCLEX-RN[©] pass rates and minority students with or without the use of support programs for first-time success. For undergraduate minority nursing students in pre-licensure programs, does a support program compared to no support program increase NCLEX-RN[©] first time pass rates to increase the minority nurse work force in the United States?

Definitions

The term minority is defined as a group of people who are different from the larger group in a country, area, or in some characteristic way (Meriam-Webster, 2017). Diversity is defined as being composed of different elements from a larger group (Meriam-Webster, 2017). Minority and Diversity will be used interchangeably for ethnicity and race. Nursing Council Licensure Exam – Registered Nurse (NCLEX-RN[©)] is the licensure exam that all student nurses need to pass to practice within the state guidelines. School of Nursing (SON) is identified as the nursing program institution. Support programs are defined as containing the triad of academic, social, and financial support classes for minority students. The nursing programs used for this study

vary from Associate Degree (2 year program) to Baccalaureate Degree (4 year program), and an entry level Master's Accelerated Degree (1-2 year program) are not differentiated for this study.

Summary

Increasing minority nurses at the bedside can be a challenging endeavor because of multiple variables that can affect positive outcomes. The significance to nursing education is to look at current interventions to increase success rates for minority students. The use of a comprehensive support program in SON have reported success in retention and graduation rates. It has not increased NCLEX-RN first time pass rates which can impact a SON accreditation.

CHAPTER II

METHODS

To decrease health disparities among minority communities in the United States, diverse health care providers are needed to bridge the gap between the cultural and language barrier, and to increase a trust bond between healthcare providers and minority communities (HRSA, 2015). According to the CDC, the lack of access of healthcare to these communities has been detrimental to their health (2013). To increase minorities delivering health care, minority students need to be successful in a nursing program and pass the NCLEX-RN[©] licensure exam. Challenges in financial, social, and academic areas have impeded the process. SON have created support programs to ensure successful graduation and passing of the NCLEX exam. For minority undergraduate nursing students in pre-licensure programs, does a support program compared to no support programs increase NCLEX first time pass rates? In order to increase the minority nurse work force in the United States, nursing students must pass the NCLEX exam. This is an evidence synthesis based-project examining current literature to be used for future studies or propose academic practice changes.

The databases CINAHL, ERIC, and PUBMed were accessed for initial research articles published between 2000 - 2016. Using the CINAHL terms NCLEX-RN, diversity, minority, licensure, retention, 13 articles were identified. Exclusion criteria included dissertations and magazines and decreased the number of articles to nine. PubMed was accessed using MeSH terms licensure, nursing, continental population groups and yielded twenty articles. Eleven of the PubMed articles were excluded and nine articles were duplicated from CINAHL. ERIC was also accessed using terms licensure, minority and nursing. Exclusion criteria included books,

magazines, and ERIC technical documents. Five articles were identified but did not met inclusion criteria.

From the CINAHL and PubMed database, 13 articles were eligible for review. Further exclusion criteria included absent NCLEX-RN pass rates, no support program intervention, and technical reports from nationally recognized nursing organizations which reduced the articles to five. Five articles were critiqued for this evidence synthesis (See Appendix A Prism Flow chart).

The articles were critiqued using the John's Hopkins Research Appraisal Tool (Dearholt & Dang, 2012). The articles were critiqued for type, level of evidence, and quality appraisal (See Appendix B Literature Matrix). The articles were leveled at V which are categorized as Literature Review, Program Evaluation, and Program Improvement evidence. The quality of the five articles are a C, low quality. The five articles chosen provided data on NCLEX-RN$^{©}$ first time pass rates, use of support program, and the outcomes associated with the intervention.

CHAPTER III

LITERATURE REVIEW AND ANALYSIS

To meet the healthcare needs of a growing and diverse population in the United States, minority nurses are needed to care for the increasing numbers of minority patients (IOM, 2010). Minority nurses provide a cultural perspective, language acquisition, and health access for minority patients which may decrease health disparities (IOM, 2015). To increase a diverse nursing workforce, nursing students need to complete a SON program and pass the NCLEX-RN licensure exam. In the United States, only 21 SON developed support programs to assist with the needs of minority students (Murray, 2014). The literature review will address two areas of research related to the lack of minority nurses in the workforce. The first section will address the need for support program interventions for minority nursing students and the support programs results on retention and graduation rates. The second section will address NCLEX-RN licensure exam first time pass rates after students complete a support program.

Need for Support Programs

The need for support programs in SON are to increase retention rates, graduation rates, and pass NCLEX-RN licensure exam. High attrition rates were associated with poor preparation for higher education learning, poor socioeconomic factors that affect limited resources, and lack of social support (Murray et al., 2016). Studies from several authors reported minority students performed poorer in academic and standardized testing compared to Non-Hispanic, White students (Murray et al., 2016; Condon et al., 2013, Sullivan, 2004; Colville, 2014; Gordon &Copes, 2010; Cowan et al., 2015; and Melillo et al., 2013). Attrition rates in a Pittsburgh Community College setting reported 54% in the first year of nursing school among minority students (Colville, 2014). Seago and Spetz (2005) reported a 50% attrition rate among minority

nursing students in California state community college programs. Other identified barriers related to high attrition rates among minority students are the lack of financial and social support resources while in school (Murray et al., 2016; Condon et al., 2013, Sullivan, 2004; Colville, 2014; Gordon &Copes, 2010; Cowan et al., 2015; and Melillo et al., 2013). To combat the barriers in academic, financial, and social issues, SON developed a three-prong approach to support students in these areas. Agencies such as the US Department of Health and Human Services: Nursing Diversity Workforce Grant and the Robert Wood Johnson Foundation provided financial assistance to the SON to implement their support programs.

Condon, Morgan, Miller, Mamier, Zimmerman, and Mazhar (2013) evaluated their support program, Success in Learning: Individualized Pathways Program (SLIPP). A sample of 77 minority students met the specific description of disadvantaged ethnically diverse for the HRSA grant completed the pre-entrance quarter. There was a 9% attrition rate. The authors note that five students dropped out but four of these were due to academic failure. There were also eight students that completed nursing degrees at other programs and were included in this analysis. The student sample was 16% African American, 31% Hispanic, .03% American Indian, 32% Asian, and 17% Caucasian in one university who were enrolled in the SLIPP program. Prior to the pre-entrance quarter, students needed one and a half years of humanities and sciences as pre-requisite courses prior to the Bachelors of nursing curriculum.

Their support program included a Pre-Entrance ten-week boot camp course to college, financial provision for each student, academic preparation throughout the program, and social support in the form of mentor/faculty and family. Faculty development in cultural competency was also introduced. Four minority faculty members taught the courses for SLIPP.

The results of the program yielded a 90.9% graduation rate and a 19% attrition rate

(Condon et al., 2013). A survey was given to the SLIPP program attendees. There was a survey response rate of 72.7% and 60.7% of respondents rated the pre-entrance program a successful tool, especially in critical thinking and study strategies courses. A purposeful interview of 9 participants verbally reported the pre-entrance program was important to their success, especially in the social support program and the academic.

Colville, Cottom, Robinette, Wald, and Waters (2014) evaluated their support program RN Achievement Model. The study was over five years in an urban community college in southwestern Pennsylvania. A convenience sample of 308 students who met criteria for diversity and disadvantage were included in this program. Forty-four percent of the 308 students were African American, 44% Caucasian, 4% Asian, 4% unknown/other/biracial, 1% Hispanic. The comprehensive approach consisted of a one-year pre-entrance preparation program, training as a Certified Nursing Assistant at the end of that first year, financial assistance, including stipends from a HRSA grant, and ongoing academic and social support during the nursing program. Nursing faculty served as case managers, along with RN academic tutors, a retention specialist and a social worker to facilitate retention and successful completion of the nursing program. Students were also provided with an NCLEX review course after graduation before taking the licensure exam. Outcomes for the RN Achievement program were higher compared to other nursing students at the community college. Retention rate was 84.5% compared to 70.8% for other nursing students.

Gordon and Copes (2010) evaluated their program Coppin Academy for Pre-Nursing Success (CAPS). In an urban setting in Baltimore County Maryland, about 50 or more students met the criteria for disadvantaged and ethnically diverse students HRSA grant. The study was over three years. The convenience sample of 50 students were participated in the study. It is

unknown the characteristics of the sample size. The support program included a pre-entry program from high school combined with individualized intervention plans and there were monthly financial stipends given to the students. It is reported that retention rates were above average for the university. No data was reported.

Cowan, Weeks, & Wicks (2015) studied their program Scholarships for Underrepresented Students in an Accelerated Initial Nursing (SUSTAIN). In a Christian faith based Tennessee University, the study was conducted over 5 years. In an accelerated MSN nursing program, a convenience sample size of 51 students were studied. The study reported a 75% ethnically diverse student population with no demographic breakdown. The study also included males as part of the minority population at 35%. In this program, 92% of the students met the criteria for disadvantaged and ethnically diverse students HRSA grant. The students accepted also had previous non-nursing degrees and work experience. The support program relied heavily on mentorship with each of their students as well as tutoring, small group discussion, and real-life work scenarios with mentors. The program had 100% retention rate of their SUSTAIN students.

Melillo, Dowling, Abdallah, Findeisen, and Knight (2013) studied their program Bring Diversity to Nursing. In an urban university setting in Lowell Massachusetts, the study was over a 3 year period, 2007-2010. This was a BSN program. The sample size demographics in 2007 were 5% Asian/Pacific Islander, 5% Hispanic, and 7% Black. The sample size in 2010 were 7.8% Asian/Pacific Islander, 6.4% Hispanic, 5.3% Black, and 0.7% two or more races. The comprehensive program consisted of mental health

counseling, academic, and sociocultural support, stipends, and computers. Funding for this program came from several sources, HRSA, the SON institution, and Massachusetts Department of Health, Reducing Racial and Ethnic Health Disparities grant. The study reported retention rates of 77% in 2008-2009, 90% in 2009-2010, and 92% in 2010-2011. It was also reported a 100% graduation rate for all three years.

First time NCLEX-RN Pass Rates

The importance of first time NCLEX-RN pass rates are correlated to accreditation criteria of SON. The bar of 80% pass rate is set for all nursing schools to be compliant with accreditation (NCSBN, 2017). Nursing students may take the NCLEX-RN multiple times but it is the importance of the first time taking the test that are vital to nursing school programs. It is also important to pass this exam to be a successfully deployed nurse and to increase minority nurses in the workforce.

Condon et al. (2013) had an NCLEX-RN pass rate goal of 85% within one year. The SLIPP program exceeded their projections by 10%. NCLEX-RN pass rate goal was met with 98.6%. The authors reported an NCLEX pass rate of 98.6% for their overall program which included students who took the exam more than once. Only 37 students out of 69 (59%) passed NCLEX-RN on the first time. Colville (2014) reported an overall NCLEX pass rate was 87.5% compared to 82% for the entire RN Achievement program. First-time pass NCLEX pass rates were not identified. Gordon & Copes (2010) CAPS program stated all identified students (50) passed the NCLEX-RN on their first try for the study period of 2008-2010. Cowan (2015) stated that 92% of their SUSTAIN students passed the NCLEX on the first try. Melillo et al. (2013) Bring Diversity to Nursing program reported NCLEX pass rates at 100% in year 2008-2009 for one student, 100% in year 2009-2010 for five students, and 87.5% in year 2010-2011.

Summary

From the current research, the use of support programs as an intervention for minority students to be successful in a nursing program are inconclusive. (See Appendix B for Literature Matrix). All the studies provided a comprehensive approach to support minority students in nursing school. All the studies also provided financial stipends for students. While all the studies reported having higher retention and graduation rates, they fail to increase first time NCLEX pass rates among minority students. SON will not benefit from students who do not pass the NCLEX-RN on their first time because of accreditation. However, minority nursing students may repeat the NCLEX-RN until they pass which will increase minority nurses. The interventions proposed may not be financially feasible for all SON. HRSA grant is time limited. Condon et al. reported each student received about $15, 125. For 70 students, the cost for minority students to be successful would be $1,058,750. These studies were low level of evidence with multiple flaws. There were multiple interventions and almost universally no data analysis to support statistically significant findings.

CHAPTER IV

SYNTHESIS AND RESULTS

To meet the demands of a growing and diverse United States population, minority nurses are needed at the bedside to care for the patients (IOM, 2011). The presence of minority nurses may provide health care access, cultural competence, and language acquisition to accommodate minority patients (IOM, 2015). To increase diversity in the nursing workforce, minority nursing students need to complete a nursing program and pass the NCLEX licensure exam. Identified barriers in academic, financial, and social components were incorporated in support programs to help minority student nurses succeed in school (Murray et al., 2016). To answer the evidence based question, for undergraduate minority nursing students in pre-licensure programs, does a support program compared to no support program increase NCLEX-RN$^{©}$ first time pass rates to increase the minority nurse work force in the United States five articles were reviewed (See Appendix B).

The five articles critiqued for this evidence synthesis met the inclusion criteria of a support program as the intervention, graduation and retention rates, and NCLEX first time pass rates. The study samples also needed to meet the criteria for disadvantaged ethnically and diverse nursing students to qualify for grant monies. All five studies are program evaluations with quantitative reports. According to the Johns Hopkins Research Tool, they were all a Level V and a quality of C (Dearholt & Dang, 2012). (See Table 1 Results)

Condon et al. (2013) SLIPP study was strengthened by a comprehensive, holistic program to address retention and recruitment for disadvantaged and ethnically diverse students. This included ethnically diverse faculty who taught the pre-entrance quarter classes and academic advisers of the same or similar ethnicity as the student who guided students across the

curriculum. Limitations include a convenience sample for descriptive results and purposeful sample for interviews. Confounding variables such as English as a Second Language, first generation college student, single parenting, and no leadership experience were not controlled and impacted internal validity. The small sample size also limited external validity. Generalizability was not applicable beyond one institution setting. The Likert scale instrument used in this study provided no psychometrics by the researchers which compromises validity. No demographic comparisons were performed on return surveys. The phone interviews used a qualitative method with no data saturation, emerging themes or qualitative rigor were reported. The study also lacked financial comparisons. The SLIPP study provided $15,125 for each of the 77 students. Substantial financial assistance was provided from the college ($1000 tuition discount per quarter and a $200 – 250 stipend per month from a HRSA grant). This is a financial risk for nursing schools with limited resources. No statistical analysis was provided by the authors.

Colville's RN Achievement Model study included a comprehensive inter-professional approach. Limitations include a small, convenience sample at one study site, limiting generalizability. No statistical analysis was done to determine if findings were statistically significant compared to other nursing students in the program or to pre-program years. Financial implications were not addressed, although the authors state they are reviewing this data and recognize a need for another financial source. There was no instrument reported to obtain data. This was purely a descriptive study based on data from one institution. Finally, with multiple faculty implementing the program, internal validity may be limited due to lack of intervention fidelity.

Gordon and Copes (2010) CAPS program incorporated a comprehensive support program that initiated in high school. Limitations include a small sample size at one setting, limiting generalizability. There were no demographic comparisons made on the sample. No statistical analysis was performed on the data. Research lacked evidence for internal and external validity. The data presented lacked sufficient evidence of NCLEX-RN pass rates for the year 2008. The lack of data on NCLEX-RN pass rates made it difficult to conclude the intervention performed well. This was also another descriptive study of convenience.

Cowan et al. (2015) Sustain Program was a comprehensive support program that also included males as part of their definition of minority nursing students. Limitation include lack of statistical analysis and demographic comparison elude the validity of the program's success. There were no financial comparisons analyzed to report if the program is feasible intervention. Small sample size limited to only accelerated entry level MSN programs diminishes generalizability. Finally, this was another descriptive study of convenience.

Melillo et al. (2013) Bring Diversity to Nursing program provided a comprehensive support program and competitive admission criteria to the nursing program. Limitations include lack of demographic comparison, no confounding variable control, no statistical analysis, no financial analysis, and small convenience sample size. Internal and external validity and reliability of the study are limited. Data was not clearly presented and lacked consistency in NCLEX pass rates. Unable to conclude if the support program was effective.

Conclusion

The support program results from the studies may report that it is overwhelmingly positive intervention but the research is lacking. The inability to recreate these programs without heavy financial assistance is troubling. Out of the five studies, only one study answered the

evidence base question. More quality studies are need to investigate how to increase minority

nursing students effectively and efficiently.

Table 1 Results Johns Hopkins Research Tool

Level of Evidence	Number of Articles	Quality Rating of Articles
I	0	Not Applicable
II	0	Not Applicable
III	0	Not Applicable
IV	0	Not Applicable
V	5	C

CHAPTER V

DISCUSSION AND CONCLUSION

Schools of nursing developed comprehensive programs to increase minority nursing students' success rates. Identified barriers in academic, financial, and social resources lay the foundation for the development of the programs (Condon et al., 2013; Colville, 2014; Gordon & Copes, 2010; Cowan et al., 2014; Melillo et al., 2013). Diversity in nursing is recommended to reflect the increasing minority population of the United States (CDC, 2014). By increasing a diverse nurse workforce, minority patients may feel more trust, advocacy, less cultural biases, and increase communication (Murray, 2016). By building health community relationships within minority groups, a decrease in health disparities may begin.

Several studies have reported the effectiveness of their support programs in comparison to retention, graduation, and NCLEX-RN pass rates. Research has shown strong correlations to mentorship and provision of social and financial resources as strong interventions (Melillo et al., 2013; Cowan et al., 2014, Gordon & Copes, 2010). Yet, NCLEX-RN first time pass rates were not generally higher among minority nursing students with these interventions. It is possible that there are other factors that prohibit success.

The purpose of this evidence synthesis is to identify if support programs increase NCLEX-RN first time pass rates for minority students which would increase a diverse nursing workforce. It is also the intention of the author to identify the types of support programs presently being used in the SON. The financial factor associated with these programs was not under the original intention of the study but became a strong factor against the intervention.

Condon, Morgan, Miller, Mamier & Mahzar (2013) reported their SLIPP program using a pre-entrance preparation program, academic and social support, financial aid, and faculty

development workshops. The pre-entrance course provided information on critical thinking, medical terminology, study skills, and test examination analysis. The program goals were to increase retention at 80% and increase NCLEX-RN exams to 85% in one year. They met their program goals. The reported first time NCLEX-RN pass rates were 59% (n=37). This is below the national average for NCLEX-RN first time pass rates (NCSBN, 2017). There were no statistical analysis, demographic comparison, and limited sample characteristics. The financial aid provided to these students but the amount of aid provided estimated $15,125 per student. For the 70 students that participated, the author of this evidence synthesizing project calculated the total aid at $1,058,750. No financial comparisons were provided but this amount of aid is not feasible for all nursing programs to acquire or maintain. The overall NCLEX-RN pass rates for the program is at 90.9% but that was with multiple attempts of taking NCLEX. The nursing program would lose accreditation with the first time pass rates of 59%.

Colville 's RN Achievement Model used a comprehensive program that incorporated case managers, social worker, and project coordinator. For eligibility, students needed to have 1.5 years of sciences before the pre-year program. The program included a pre -year courses in study skills, critical thinking, computer instruction, advising, and study group formations. Self-reflective practices such as discussion forums, small group formal discussions, papers, and leadership courses were also provided. The pre -year cohort also had opportunities to be mentored in the hospital settings and become certified nurse assistants. The pre- year was also organized by a certified nurse trainer/tutor. The authors did not report first time NCLEX-RN pass rates but stated the overall pass rate was 87.5%. The financial component associated with the study was also not disclosed. Students did receive a scholarship, stipends and financial aid to be a part of the nursing program. The creation of new jobs for case managers, social worker, and

nurse trainer/tutor was also part of the cost for this program that was not disclosed. With limited data on NCLEX-RN pass rates and financial component, it is difficult to show the successfulness of the program.

Gordon & Copes (2010) CAPS program used a comprehensive process that initiated in high school. Students that met the criteria for disadvantaged minority youth were eligible. A pre-entry program combined with individualized intervention plans were provided. High School students were also given a monthly stipend when enrolled in the program. Limited data of first time NCLEX-RN pass rates were stated that all students passed on the first try for cohort 2008 but none for 2009 and 2010. This also limits the generalizability that this program was effective for increasing minority nurses to 50 -70 students into the workforce. Limited data was provided for the financial picture for this program. Students were given a monthly stipend and financial aid that alleviated financial burdens. Without knowing the financial comparisons for this project, it is difficult to show the effectiveness of this program. Even though retention rates were exceeded by using the program, it does not negate the fact that passing the NCLEX-RN licensure exam is a necessary component to increasing diverse nurses into the workforce.

Cowan, Weeks, & Wicks (2015) SUSTAIN program was also a comprehensive program addressing academic and social support to their students. They relied heavily on mentorship and leadership for their students to be successful. In the five year study, NCLEX-RN first time pass rates were at 92%. The students that were eligible had degrees in other areas than nursing. This was an accelerated MSN degree program. The program also boasts a 100% retention rate. There was also a financial component for students while in the program. There was no demographic, statistical, or financial analysis for this study.

Melillo, Dowling, Abdallah, Findeisen, and Knight (2013) Bring Diversity to Nursing program was a comprehensive program. The program consisted of mental health counseling, academic, sociocultural support, stipends, and computers. Recruitment into the nursing program began in middle school with nursing clubs by nursing staff. The nursing staff consisted of minority nurse recruiter, nurse for the middle and high school clubs, academic tutor, mental health nurse practitioner, and guidance counselor. The data provided did not reflect the sample size. In the three year study, data was only listed for a total of 14 students who passed NCLEX-RN on the first try. The sample size for the three years was 87 students enrolled. If only 14 students passed NCLEX-RN on the first try that is a 16% pass rate. This is considerably below national standards of any nursing program. The limited number of students (n=14) that passed NCLEX and entered into the workforce could not justify the financial cost the institution, the state of Massachusetts, and the HRSA grant provided this program.

Out of the five studies, four of them used a pre-entry program that prepared students for higher learning. Study skills, test taking, communication, study groups, critical thinking, and medical terminology courses provided the knowledge to be successful in nursing school. Each program provided mentorship from model nurses or nurse leaders. Each program also provided a financial stipend, computers, technology, and allowances to be able to attend. The bottom line of these programs is that they entail a considerable expense to be used as a general intervention to increase minority nurses into the workforce. Further studies, such as quasi experimental designs with power analyses for sample size, are critically needed to investigate an evidence-based approach to increasing diversity in the nursing workforce. Detailed comprehensive financial analysis is also important to determine sustainability of the programs. Minority nurses

are needed to be reflective of the population. Determining the best evidence based approach is

critical to meet this need.

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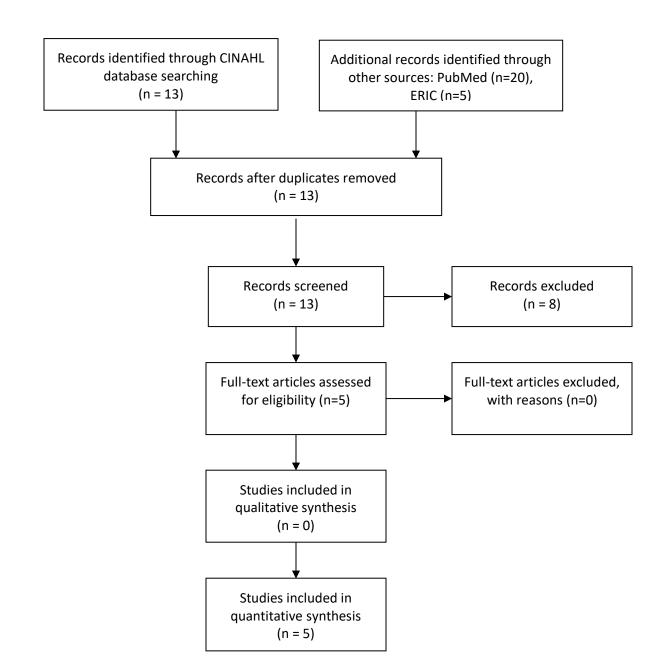tions.pdf

Appendix A

PRISMA 2009 Flow Diagram

Identification	Records identified through CINAHL database searching (n = 13)	Additional records identified through other sources: PubMed (n=20), ERIC (n=5)

Records after duplicates removed
(n = 13)

Screening	Records screened (n = 13)	Records excluded (n = 8)

Eligibility	Full-text articles assessed for eligibility (n=5)	Full-text articles excluded, with reasons (n=0)

Studies included in qualitative synthesis
(n = 0)

Included	Studies included in quantitative synthesis (n = 5)

Appendix B

Literature Matrix

John Hopkins Individual Evidence Summary Tool

Author	Evidence Type	Setting, Sample and Type, Power Analysis	Study findings for EBP question	Strengths	Weakness/Limitations	Level	Quality
#1 Condon, V., et al.(2013)

SLIPP Project | Summative Program Evaluation | In a faith based health sciences university in Western United States, 77 disadvantaged and ethnically diverse nursing students. 90.9% graduated with a BSN degree and 15.6% graduated with an AS degree.

19% attrition rate: 4 for academic failure, 2 left for awhile and started another nursing program. 8 students completed | The SLIPP program did meet the program evaluation goals to increase retention of ethnically diverse and disadvantaged students and to increase program completion rate to 80% and NCLEX pass rate within 1 year to 85%.

Program completion rate was 90.9% and | Survey questionnaire (72.7% answered) 56 students out of 77 SLIPP participants returned survey and rated the SLIPP program was important to their success. Critical thinking and study strategies rated highest, then Medical Terminology and Math for nursing courses. No other strengths were noted in this | It was a convenience sample for descriptive results and purposeful sample for interviews. Confounding variables were not controlled, impacting internal validity. For example, English as a second language, first generation college student, single parenting, leadership experience. No comparison of demographics were noted within the study. The quality of the sample (small percentage of disadvantaged and ethnically diverse | V | C |

Author	Evidence Type	Setting, Sample and Type, Power Analysis	Study findings for EBP question	Strengths	Weakness/Limitations	Level	Quality
Condon, V., et al.(2013) SLIPP Project (Cont'd)		nursing programs elsewhere Sample Demographics: 16% African American 31% Hispanic .03% American Indian 32% Asian 17% Caucasian Fit defined criteria "Disadvantaged and ethnically diverse nursing students" per U.S. Dept. Of Health and Human Services. This was a convenience sample for quantitative data and a purposive	overall NCLEX pass rate was 98.6%. Only 59% (n = 37) passed 1st time which is below national average (37 students passed first time) No, this support program did not increase first time pass rates for ethnically, diverse students.	study. .	students) and size of sample compromised the external validity. One study site limited generalizability to ethnically diverse and disadvantaged nursing students. The Likert scale instrument used in this study for a 62 questionnaire evaluated participant perception of the importance of the program. The scale was not tested for internal consistency, test-retest reliability, and interrater reliability. No demographic comparison was performed on the survey returns.		

Author	Evidence Type	Setting, Sample and Type, Power Analysis	Study findings for EBP question	Strengths	Weakness/Limitations	Level	Quality
Condon, V., et al.(2013) SLIPP Project (Cont'd)		sample for the interviews. No power analysis was provided for a descriptive study.			9 Phone Interviews that were a purposeful sample recorded. Study does not state if themes emerged, control of confounding variables of the sample, data saturation, no qualitative rigor was identified. The qualitative approach did not address auditability, confirmability, fittingness, transferability. No financial comparisons were made for this study. For 70 students, $15,125 per student was provided from the school and HRSA Diverse Nursing Grant.		

Author	Evidence Type	Setting, Sample and Type, Power Analysis	Study findings for EBP question	Strengths	Weakness/Limitations	Level	Quality
					No statistical analysis was provided. Limitations were not provided by the authors.		
#2 Colville, J. (2014). RN Achievement model	Program Evaluation	In an urban Pittsburgh Community College setting a sample of 308 disadvantaged and ethnically diverse nursing students. The study was over a 5 year period, 2008-2013. Sample: 44% African American students, 44% Caucasian 4% Asian,1% Hispanic, 3%	RN Achievement Program increased retention from 30% to nearly 85% over the 5 years. Overall NCLEX-pass rate= 87.5%. Authors state that "most" passed on the first attempt, but no data	Comprehensive support model with RN case managers, social worker and project coordinator. Some data provided on retention, graduation and NCLEX results prior to institution of RN Achievement program.	NO comparison of demographics, control of confounding variables, and the small sample size affected the quality. No instrument was reported to obtain data. This lacked evidence. Internal and external validity were not present. This was purely a descriptive study based on one institution's findings.	V	C

Author	Evidence Type	Setting, Sample and Type, Power Analysis	Study findings for EBP question	Strengths	Weakness/Limitations	Level	Quality
Colville, J. (2014). RN Achievement model (Cont'd)		Biracial, 4% Other/Unknown

No Power analysis was provided for a descriptive study. | provided.

Not able to answer EBP question. | | No statistical analysis done to determine significance of findings.

Authors state the financial sustainability of the program will be grant dependent. Another financial source is needed.

Limitations were not presented by the authors. | | |

Author	Evidence Type	Setting, Sample and Type, Power Analysis	Study findings for EBP question	Strengths	Weakness/Limitations	Level	Quality
#3 Gordon, F. & Copes, M. (2010) CAPS Program	Program Evaluation	Coppin State University in conjunction with Helene Fuld School of Nursing in Baltimore, MD. Working with High school students that meet the criteria of disadvantaged and ethnically diverse nursing students per HRSA grant in Baltimore County. The study period was from 2008-2010. Sample size: 2008 unknown number but all passed NCLEX on first time. 2009 =20 CAPS graduated,	CAPS program. Funded by HRSA grant. Goals: to recruit and retain minority nursing students and address holistic needs. Pre-entry program for disadvantaged minority high school students combined with Individualized Intervention Plans. Monthly stipend for high school students. Authors state retention exceeds university's average retention rates. No data given.	Comprehensive support program starting in high school.	No instruments identified and no statistical analysis of the data. The research lacked evidence for internal and external validity. Lacked sufficient evidence of NCLEX pass rates. Data was not clearly stated. Sample size for each cohort was not described. NCLEX pass rates only for 2008 No demographic comparison or statistical analysis noted in the study. Unable to make generalizations.	V	C

Author	Evidence Type	Setting, Sample and Type, Power Analysis	Study findings for EBP question	Strengths	Weakness/Limitations	Level	Quality
Gordon, F. & Copes, M. (2010) CAPS Program (Cont'd)		unknown NCLEX first time pass rate 2010 =30 projected to graduate, unknown first time pass rate.	Unknown sample size for first cohort (2008) but all passed NCLEX the first time. No other rates were provided for 2009, 2010.		This is purely a descriptive study of one convenience sample.		

Author	Evidence Type	Setting, Sample and Type, Power Analysis	Study findings for EBP question	Strengths	Weakness/Limitations	Level	Quality
#4 Cowan, P.A., et al. (2015). SUSTAIN Program	Program Eval	In a Tennessee University, 51 students of minority and male nursing students in an accelerated program (Entry level MSN-CNL) from 2009-2014. The students met the criteria of disadvantaged and ethnically diverse nursing students. Sample: students with previous non-nursing degrees and work experience; 75% Ethnically diverse (no demographic breakdown) 35% Male students 92% Economically disadvantaged	SUSTAIN program consisting of social and academic support. Achieved 100% retention Yes. The program supported students. 92% NCLEX first time pass rate	Comprehensive support program. Included males as a minority in nursing. Provided statistics specific to program outcomes.	Without proper analysis of the program, internal and external validity were not evident. No comparison with disadvantaged students in program prior to 2009. The descriptive analysis did not breakdown the ethnically diverse students. It also included males as part of their diverse nursing students. Students received stipends and tutoring throughout this program. No financial comparison was performed to see effectiveness of program.	V	C

Author	Evidence Type	Setting, Sample and Type, Power Analysis	Study findings for EBP question	Strengths	Weakness/Limitations	Level	Quality
		No power analysis noted due to the descriptive nature of the study			Generalizability is limited to accelerated entry level MSN programs.		
#5 Melillo, K.D. et al.,(2013) BDN= Bring Diversity to Nursing	Program Eval	At the University of Massachusetts Lowell in urban school setting, students that met the HRSA criteria of disadvantaged and ethnically diverse were included in this study. This was a 3 year study. Sample: **2007-** 5% Asian/Pacific Island 5% Hispanic 7% Black	Comprehensive program consisting of mental health counseling, academic and sociocultural support, stipends, computers. 100% graduation rate in all 3 years. NCLEX pass rate first time 2008-2009 1 student took NCLEX and passed on the	Strengths include competitive admission criteria and comprehensive program.	The study lacked demographic comparison, confounding variable control, sample size and quality control, and statistical analysis. Internal and external validity or not observed. Reliability is also not seen in this study. No strengths noted in this study due to many confounding variables not controlled, sample size and quality were not well described, and	V	C

Author	Evidence Type	Setting, Sample and Type, Power Analysis	Study findings for EBP question	Strengths	Weakness/Limitations	Level	Quality
Melillo, K.D. et al.,(2013) BDN= Bring Diversity to Nursing (Cont'd)		**2010-** 7.8% Asian/Pacific Island 6.4% Hispanic 5.3% Black 0.7% Two or more races No power analysis was provided for this descriptive study.	first time (100%) 2009-2010- 5 students took NCLEX and passed (100%) 2010-2011- 8 students took NCLEX and 7 passed on first time (87.5%) 2008-2009- 77% Retained students 2009-2010 – 90% Retained students 2010-2011- 92% Retained student Yes. Support programs do		no instrument was used to analyze the data. No financial comparison was made for the efforts of this study and the effectiveness. Very small sample size for NCLEX results. Data not clearly stated about sample demographics. Lacking evidence in year 2011. A survey was given to potential sample but not tested for reliability or validity of sample type. Lacked consistency in results for NCLEX pass is only for those who graduated in that particular year. The		

Author	Evidence Type	Setting, Sample and Type, Power Analysis	Study findings for EBP question	Strengths	Weakness/Limitations	Level	Quality
			increase NCLEX first time pass rates		authors state that there were 7 seniors in 2008 – 2009 but only 2 for NCLEX results for that year.		

Level I= Experimental Study, RCT Systematic Review with or without meta-analysis

Level II= Quasi-experimental studies, Systematic review or combo with RCT with quasi-experimental with or without meta-analysis

Level III= Non-experimental study, Qualitative study or systematic review with/without meta-analysis.

Level IV= Opinion of respected authorities or reports of nationally recognized expert committee based on scientific evidence

Level V= Evidence obtained from Literature reviews, quality improvement, program evaluation, financial evaluation, or case reports. Opinions nationally recognized

(Dearholt & Dang, (2012), Johns Hopkins Nursing Evidence Based Tool