Predictors of Underrepresented Nursing Students’ School Satisfaction, Success, and Future Education Intent

Lovoria B. Williams, PhD, FNP-BC, FAANP; Annette B. Bourgault, PhD, RN, CNL; Michael Valenti, PhD, RN; Melissa Howie, MS; and Sunil Mathur, PhD

ABSTRACT

Background: The United States is steadily becoming more diverse. If current trends continue, the minority population will be the majority by 2043. In contrast to the U.S. population, nursing (the largest health care workforce) is composed of a nearly 76% White population. The literature reports that underrepresented minorities (URM) in nursing programs encounter multiple barriers to academic success.

Method: A secondary data analysis of a national cohort of URM accelerated nursing students was conducted to examine three factors associated with microaggression—predictors of academic (NCLEX) success, satisfaction, and intent to pursue advanced education—among a cohort of URM accelerated nursing students who had received a national diversity scholarship (n = 2,250).

Results: These three factors were predicted by institutional climate, mentoring, social interactions, the prematriculation preparation program, and other psychological, social, and cultural barriers.

Conclusion: To increase nursing diversity and ensure a culturally competent profession, programs must attend to these factors. [J Nurs. Educ. 2018;57(3):142-149.]

Copyright © SLACK Incorporated

The United States is steadily becoming more diverse. According to the U.S. Census Bureau in 2012, minority groups comprised 37% of the population. Moreover, if current population trends continue, the minority population will be the majority by 2043 (U.S. Census Bureau, 2012). In contrast to the diversity of the U.S. population, the health care workforce remains predominantly White. Nursing, the largest health care workforce, comprises 24.5% minorities; 75.5% of the RN population is White, 9.9% African American, 4.8% Hispanic, 8.3% Asian/Native Hawaiian, 0.4% American Indian/Alaskan Native, and 1.3% multiracial (U.S. Department of Health and Human Services, 2013).

Grant funding provided by the Robert Wood Johnson Foundation (RWJF), Human Resources & Services Administration, and others to support diversity programs has contributed to the increased enrollment of underrepresented minority (URM) students. According to the American Association of Colleges of Nursing (AACN), in 2016 the enrollment of URM students in baccalaureate programs was 31.6%, the highest ever (AACN, 2016b). A growing body of literature suggests, however, that once URM students have gained admission to nursing school they encounter barriers to academic success that are directly related to negative experiences with the academic institution (Loftin, Newman, Dumas, Gilden, & Bond, 2012; Metcalfe & Neubrander, 2016; Zeitlin-Ophir, Melitz, Miller, Podoshin, & Mesh, 2004). URM students who matriculate in predominantly White institutions (PWIs) report unwelcoming institutional climates (ICs) that lead to perceptions of microaggressions and social isolation (Hall & Fields, 2012; Loftus & Duty, 2010). Institutional climate is defined as the collective social, cultural, and psychological attitudes and values that prevail within an institution. In essence, institutional climate is the real or perceived manifestations of an institution’s commitment to diversity. Institutional climate also directly affects a student’s academic persistence and scholastic success (Sullivan Commission, 2004b, p. 83). Institutional climate is often associated with microaggressions, which are defined as grievous but superficially innocuous insults—verbal, nonverbal, or visual, directed toward racial minorities—that are (often unconscious) degradations (Pierce, 1995).
In 2008 the RWJF and AACN collaborated to implement the New Careers in Nursing (NCIN) scholarship program. The purpose of NCIN was fourfold: (a) help alleviate the national nursing shortage; (b) increase the diversity of nursing professionals; (c) expand capacity in baccalaureate and graduate nursing programs; and (d) enhance the pipeline of future nurse faculty. Through seven rounds of grants to U.S. schools of nursing, the NCIN provided $10,000 scholarships to individuals enrolled in accelerated nursing programs who were members of groups underrepresented in nursing, including men or financially disadvantaged individuals (AACN, 2016a). The accelerated programs enroll students who have bachelor’s degrees in non-nursing disciplines. Over the 7-year grant period, NCIN awarded 3,506 scholarships. Of those scholarships, approximately 80% \((n = 2,706)\) were awarded to accelerated Bachelor of Science in Nursing programs and 20% \((n = 800)\) to accelerated Master of Science in Nursing programs (DeWitty, Huerta, & Downing, 2016).

According to DeWitty et al. (2016), each NCIN grantee school customized the program components; however, all schools included leadership development and mentoring for the NCIN recipients. The NCIN program components facilitated enrollment and ongoing support for URM students throughout the program. During round 2, the program office added a Preentry Immersion Program (PIP) to help prepare students for the rigorous accelerated course work. The original PIP was structured as a 2-day program that was completed prior to matriculation.

According to Dewitty et al. (2016), the NCIN program office collected data from the scholarship recipients through SurveyMonkey® at three time points: the beginning, the midpoint of their individual nursing program, and within 6 months postgraduation. The surveys varied in length (33 to 51 items) and included demographic information and items such as satisfaction with PIP program, learning environment, institutional climate, and mentoring experience. Survey items were Likert style, multiple choice, multiple select, and open ended. Before NCIN administered the survey, it received approval from the Internal Review Committee at Education Testing Service. The final research data were de-identified; Dewitty et al. (2016) provided a full description of the NCIN sample, data collection process, and procedures. There is a dearth of published research that explores the nursing school experiences of accelerated nursing students, specifically URM students involved in a national program aimed at increasing nursing diversity.

The purpose of the secondary data analysis reported in this article was fourfold. Data for all URM students were selected from the NCIN survey results and the authors examined which psychological, social, and cultural factors predicted first-time NCLEX pass rates, satisfaction with accelerated nursing programs, and intent to pursue advanced education in nursing; further, we explored the association of psychological, social, and cultural factors with microaggressions.

**METHOD**

Work by Tinto and Pusser (2006) and Tinto’s model of student retention (2010) are education research models that specifically address variables of interest in the NCIN data set. The five conditions associated with enhanced student retention as described by Tinto are outlined in Table 1 (Tinto & Pusser, 2006; Tinto, 2010). Table 1 also explains how the researchers applied each of Tinto’s conditions to nursing programs.

To guide categorization of the NCIN survey items, the researchers conducted a literature review of factors associated with the academic success of URM students. Guided by the literature review, the researchers combined the Sullivan Commission’s (2004) definition of institutional climate, which includes psychological, social, and cultural attitudes and values, with the five conditions associated with enhanced student retention as outlined by Tinto (2010). As shown in Table 1, this combined framework was used to guide the categorization of the NCIN survey items as psychological, social, or cultural as per the Sullivan Commission definition of institutional climate.

Psychological survey items were those that pertained to information about program expectations, academic skills, and support. Additional psychological items included those related to the program’s commitment to student’s success, such as the PIP, self-care strategies, and financial, family, and other stressors. Survey items that pertained to social support included social interaction, mentoring, feedback from the program or involvement in the profession, and social integration into nursing, such as participation in health care-related events. Survey items that pertained to cultural included the nursing program's commitment to student success, such as items related to the creation of a safe and supportive academic environment (e.g., faculty and staff attitudes toward URM nursing students), the student’s level of comfort with individuals who differed from them, and the program’s willingness to commit resources to student success. In addition, the researchers categorized survey items related to perceptions of negative comments regarding race and ethnicity as microaggression. These variables included survey items that related to nursing faculty response to older or nontraditional students or if the students responded that they had heard racist comments or stereotypes.

For the statistical analysis, all Likert scale responses were converted to a binary answer \(\text{satisfied and very satisfied were coded as satisfied; very dissatisfied, dissatisfied, and equally satisfied/dissatisfied were coded as dissatisfied}\). Due to the deidentified data set, the study was deemed nonhuman subjects research by the Augusta University Institutional Review Board.

All statistical analyses were completed using SAS® version 9.4 software. Statistical significance was set at an alpha level of .05. Descriptive statistics described demographic data. Frequency tables were generated for relevant variables. Pearson correlation coefficients were analyzed for continuous level explanatory variables. Chi-square and Fisher’s exact tests of association (for parametric and nonparametric data, respectively) were conducted to determine whether there was a statistically significant association between categorical variables and the outcome measures. The explanatory variables included in the logistic regression models were based on psychological, social, and cultural categories that had a statistically significant relationship with the outcome variables. To determine whether the significance varied by time in the program of study, we analyzed each survey time point (baseline, midpoint, and exit)
separately. A series of forward, stepwise logistical regressions were performed with 95% Wald confidence intervals to model the association of the explanatory variables on the following outcome variables: passing NCLEX on first attempt, satisfaction with the accelerated program, and intent to pursue advanced nursing education.

**RESULTS**

We were specifically interested in the academic experiences of URM students. Therefore, the analysis was conducted on the data from 2,250 non-White nursing students only (i.e., a subset of the overall database). Most of our sample \( n = 2,250 \) was female.
The mean age was 28.5 years (± 6.6) at the start of the NCIN program. Almost 75% of the sample was enrolled in an accelerated Bachelor of Science in Nursing program, almost half (42.8%) of the sample was African American, and the majority self-identified as economically disadvantaged (62%).

Table 2 provides details of the sample characteristics and Table 3 provides the results yielded by each statistically significant variable, with its odds ratio and its associated category, by time point.

**Aim 1: Determine Which Psychological, Social, and Cultural Factors Predict First-Time NCLEX Pass**

**Midpoint Survey.** To predict the probability of a student passing the NCLEX examination on their first attempt, we used five variables in the stepwise logistical regression model: barriers to completion, financial concerns, quality of faculty advising, quality of nonfaculty teaching, and faculty gender representation. Students who did not perceive any barriers to completing their nursing program were three times more likely to pass the NCLEX on the first attempt ($p = .0022$). Students who were satisfied with the quality of their interaction with nonteaching faculty were five times more likely to pass the NCLEX on the first attempt ($p = .002$). Students who were satisfied with the quality of faculty advising were less likely to pass the NCLEX on the first attempt; for these students, the odds of passing the NCLEX on the first attempt were 0.20 to 1, compared with those who were not satisfied with advising ($p = .0052$).

**Aim 2: Determine Which Psychological, Social, and Cultural Factors Predict Satisfaction With Accelerated Nursing Programs**

**Entry Survey.** To predict the probability of a student being satisfied with the accelerated nursing program, four variables in the stepwise logistical regression model were used: expectations regarding program requirements, entry skills, introduction to nursing school, and, finally, involvement with mentors, health professionals, and campus activities. Students who were introduced to entry-level skills, such as test-taking strategies during the PIP program, were almost twice as likely to be satisfied with the nursing program compared with those who were not so introduced ($p = .0367$). Students who found the PIP program to be helpful were three times more likely to be satisfied with the nursing program than those who did not ($p = .0006$).

**Midpoint Survey.** We performed the regression on six explanatory variables: involvement with mentors, health professionals, and campus activities; comfort level with students from a different race; faculty attitude; gender representation of faculty; nursing program’s response to nontraditional students; and

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>n</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age (mean ± SD)</td>
<td>28.5 (6.6)</td>
<td></td>
</tr>
<tr>
<td>Gender</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>502</td>
<td>22</td>
</tr>
<tr>
<td>Female</td>
<td>1,747</td>
<td>77</td>
</tr>
<tr>
<td>Race/ethnicity</td>
<td></td>
<td></td>
</tr>
<tr>
<td>American Indian</td>
<td>30</td>
<td>1</td>
</tr>
<tr>
<td>Asian</td>
<td>387</td>
<td>17</td>
</tr>
<tr>
<td>Black/African American</td>
<td>963</td>
<td>43</td>
</tr>
<tr>
<td>Hispanic/Latino</td>
<td>499</td>
<td>22</td>
</tr>
<tr>
<td>Native Hawaiian or other Pacific Islander</td>
<td>31</td>
<td>1</td>
</tr>
<tr>
<td>Other/unknown</td>
<td>61</td>
<td>3</td>
</tr>
<tr>
<td>Marital status</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Married</td>
<td>566</td>
<td>26</td>
</tr>
<tr>
<td>Never married</td>
<td>1,431</td>
<td>166</td>
</tr>
<tr>
<td>Divorced/widowed</td>
<td>165</td>
<td>8</td>
</tr>
<tr>
<td>Economically disadvantaged</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>1,105</td>
<td>62</td>
</tr>
<tr>
<td>No</td>
<td>520</td>
<td>29</td>
</tr>
<tr>
<td>Degree program</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Accelerated BSN</td>
<td>1,686</td>
<td>75</td>
</tr>
<tr>
<td>Accelerated MSN</td>
<td>564</td>
<td>25</td>
</tr>
<tr>
<td>Years since first bachelor’s degree</td>
<td></td>
<td></td>
</tr>
<tr>
<td>&lt;1</td>
<td>357</td>
<td>16</td>
</tr>
<tr>
<td>1 to 2</td>
<td>540</td>
<td>25</td>
</tr>
<tr>
<td>3 to 5</td>
<td>600</td>
<td>28</td>
</tr>
<tr>
<td>6 to 10</td>
<td>384</td>
<td>18</td>
</tr>
<tr>
<td>&gt;10</td>
<td>287</td>
<td>13</td>
</tr>
</tbody>
</table>

Table 2
Sample Characteristics (n = 2,250)*

* Due to missing data, all category totals are not equal.
social and academic support. Students who perceived adequate gender representation in the faculty were almost twice as likely to be satisfied with the accelerated nursing program ($p = .0366$).

Those who were satisfied with the nursing program’s response to older and nontraditional students were more than twice as likely to be satisfied ($p = .0071$). Similarly, students who had academic and social support were more than twice as likely to be satisfied ($p = .0145$).

**Exit Survey.**

We performed the regression on five explanatory variables: recommend accelerated degree to friends; involvement with mentor, professional, and campus activities; social interaction with peers and faculty; perceptions of faculty attitude; and nursing school’s response to older and nontraditional students. Students who would recommend an accelerated nursing program were twice as likely to be satisfied with the program as those who would not recommend ($p = .0036$). Students who were satisfied with the faculty attitude toward students were almost six times as likely to be satisfied with the accelerated nursing program ($p = .0001$). Students who were satisfied with the nursing program’s response to nontraditional students were more than three times likely to be satisfied ($p = .0001$).

**Aim 3: Determine Which Psychological, Social, and Cultural Factors Predict Intent to Pursue Advanced Nursing Education**

**Entry Survey.** To predict the probability of a student’s intent to pursue an advanced education, we performed stepwise logistical regression on four explanatory variables: expectations...
regarding program requirements, entry skills, introduction to nursing school during the PIP, and self-support skills during PIP. Students who learned self-support skills during the PIP program were four times more likely to intend to pursue an advanced education \((p = .0015)\). Students who were introduced to nursing school were 60 times more likely to intend to pursue an advanced nursing education \((p = .0048)\).

**Midpoint Survey.** For the probability of a student’s intent to pursue an advanced education, we performed regression on two explanatory variables: barriers to completion, and having a mentor. Students who had a mentor during their nursing program were more than twice as likely to intend to pursue an advanced education \((p = .0486)\).

**Exit Survey.** To predict intent to pursue advanced education at program exit, we performed regression on three explanatory variables: regret about enrollment in an accelerated nursing program, participation with a health-related group on campus, and quality of interactions with other NCIN scholarship recipients. Students who had positive interactions with other NCIN scholarship recipients were more than four times more likely to intend to pursue an advanced education \((p = .0058)\).

**Aim 4: Explore the Association of Psychological, Social, and Cultural Factors With Microaggressions**

There were no statistically significant variables related to microaggression.

**DISCUSSION**

To our knowledge, the NCIN cohort is the largest data set of URM accelerated nursing students. This study analyzed the variables that influenced their NCLEX success, program satisfaction, and intent to pursue advanced education. In addition, we explored multiple psychological, social, and cultural variables associated with microaggression.

The variables significantly associated with NCLEX success all occurred at the midpoint survey and included quality of faculty advisement, quality of interactions with nonteaching faculty, and perception of barriers, such as lack of finances. The lack of significance of these variables at entry may have been due to the timing of survey administration. For instance, at the time of the entry survey, students may have only been weeks into their accelerated program of study and may have not sought faculty advisement. DeWitty et al. (2016) reported that students acknowledged ease of financial burden due to the scholarship funds, thus reducing the financial barrier. Multiple studies report financial barriers and their negative impact on student success (Loftin et al., 2012; Loftus & Duty, 2010; Schoofs, 2012). However, in these intense, accelerated programs, faculty may advise against student employment; yet, lack of finances requires many URM students to work while attempting to meet program demands. Working interferes with study time and reduces the time available to access supportive resources such as study groups and NCLEX preparation tools. To increase nursing diversity, it is crucial that access to social support increases and financial barriers are reduced.

Students who were satisfied with the quality of interactions with nonteaching faculty were also more likely to pass the NCLEX on the first attempt. Although nonteaching faculty may not be involved with direct student instruction, they may informally interact with students daily; if the interaction is positive, this finding may be an indicator of positive institutional climate. The literature on institutional climate supports the necessity of clear and consistent communication from all members of the nursing program, including nonfaculty staff (Tinto, 2010). One would anticipate that quality advisement results in higher NCLEX pass rates, yet when measured midprogram, surprisingly it did not. Perhaps this finding is due to the lack of a standardized student advisement program among the NCIN grantee schools. Some programs may not include advisement regarding NCLEX preparation until later in the program. Satisfaction with the nursing program was associated with the PIP, faculty gender representation, and factors pertaining both to faculty’s overall attitudes toward students and faculty’s response to older and nontraditional students. Factors pertaining to social and academic support may also be involved.

The PIP introduced these students to nursing. It was significantly associated with satisfaction with the nursing program, as well as the intent to pursue advanced nursing education. The literature reports that URM nursing students experience numerous psychological stressors that may impact their academic performance, including a lack of adequate information about program expectations and academic skills such as study, writing, test taking (Carter, Powell, Derouin, & Cusatis, 2015; Dapremont, 2014; Ferrell, DeCrane, Edwards, Foli, & Tennant, 2016; Murray, 2015; Sutherland, Hamilton, & Goodman, 2007). According to a study by Goetz (2007), URM students had a limited comprehension of what would be required of them in nursing school (Goetz, 2007). This article’s findings suggest that PIP was foundational to the students’ overall positive academic experience. The PIP provided students with essential information related to program expectations, thereby clarifying misconceptions about nursing school and preparing them psychologically and socially for the intensity of the accelerated program. In addition, although second-degree students are often older and more mature than traditional students, they still benefited from the PIP.

We found that students who were satisfied with the nursing program’s response to older and nontraditional students were more likely to be satisfied with the overall accelerated nursing program. This finding likely reflects the importance of an inclusive institutional climate. While matriculating in PWIs, URM students experience feelings of marginalization and isolation that cause them to be hesitant to ask questions or to form relationships with majority faculty (Graham, Phillips, Newman, & Atz, 2016). Faculty attitudes, although not specific to the item “program response,” may be interpreted as a subset of this survey item. As efforts continue to increase diversity, institutions must ensure that faculty are culturally competent and cognizant of matters such as microaggressions and other unconscious behaviors that negatively affect URM students (Murray, 2015).

Faculty gender representation was associated with nursing school satisfaction. This finding is consistent with the literature regarding the importance of having nursing faculty who reflect the student body (Loftin et al., 2012). Although the focus of most student diversity literature pertains to racial and ethnic
PREDICTORS OF NURSING SCHOOL SATISFACTION

diversity, the NCIN program also aimed to increase gender diversity. Having adequate faculty gender representation may be especially important to some cultures, such as the Hispanic culture, in which nursing is not viewed as a male profession (Bond et al., 2008). Bond et al. (2008) reported role stereotyping as a barrier to Hispanic males succeeding in nursing programs. The finding that social and academic support increased student satisfaction is consistent with the Sullivan Report (2004). URM students who attend PWIs often experience social isolation. Because all the NCIN grantee schools targeted enrollment of URM students, these schools may have had a larger representation of peers with URM backgrounds; therefore, this larger representation may have helped reduce students’ experience of social isolation.

Intent to pursue advanced nursing education was significantly related to social support through mentoring, interactions with other NCIN scholarship recipients, student self-support, and introduction to nursing school (e.g., PIP). Previous literature reports that factors that decrease social integration of URM students include a lack of mentor feedback, no involvement or social engagement in nursing student groups, negative faculty relationships, and absent or limited academic advising. Students’ perception of social integration in the academic and social system of an institution is a strong predictor of college student satisfaction (Porter & Barbee, 2004; Zeitlin-Ophir et al., 2004). Mentoring is foundational to retaining URM students (Cowan, Weeks, & Wicks, 2015; Crooks, 2013; Dapremont, 2014; Loftin, Newman, Gilden, Bond, & Dumas, 2013; Murray, Pole, Ciarlo, & Holmes, 2016; Sutherland et al., 2007).

Although microaggression has been associated with institutional climate in previous studies (Hall & Fields, 2012), it is possible that we did not find any significant associations because of the measurement instrument. The NCIN surveys did not have a primary intent to assess for microaggression; therefore, the number of variables related to this concept was limited.

The limitations of the study are those inherent with secondary data analysis in that the analysis was limited by the items collected in the NCIN surveys as part of the overall program evaluation. Subsequently, revisions were made to the midpoint survey after the second year of the program; thus, all NCIN recipients did not receive the same midpoint survey. Further, response rates varied between the three surveys, and all surveys showed some incomplete data from missing items. Missing data may have resulted in the wide confidence interval and high odds ratio for intent to pursue advanced education. Finally, NCIN does not report the survey psychometric data. Because this was the first large study of URM students, no validated survey instruments were available to assess URM accelerated nursing students; therefore, some of the criteria, as identified in Table 1, were not included on the NCIN survey. Future research should include the additional survey criteria as applied to nursing programs—criteria proposed in Table 1 and administered to additional populations of accelerated URM nursing students. However, despite these limitations and the use of different analysis methods, our program satisfaction results are consistent with those reported by DeWitty et al. (2016).

CONCLUSION

A diverse nursing workforce that understands cultural influences to illness and wellness and is able to adapt nursing interventions accordingly increases the likelihood that clients will receive culturally competent care. The implications of this research emphasize the importance of nursing schools’ attention to the academic, as well as social, experience of accelerated URM students. Our findings were consistent with those of the Sullivan Commission in that institutional climate variables from all three categories—psychological, social, and cultural—significantly affected student satisfaction and success. A systematic introduction to nursing school, such as the PIP, appears to positively influence program satisfaction and intent to pursue advanced nursing education among second-degree students. To recruit, retain, and increase the doctoral pipeline of URM students, nursing schools must ensure that all students are provided with an introductory foundation to nursing and that students matriculate in schools that have positive institutional climates. In addition, facilitating structured opportunities for URM students to interact with peers and nursing faculty may be important to promote a sense of social support. Nursing schools that provide psychological, social, and cultural support to URM students in accelerated nursing programs influence future health care outcomes by facilitating the preparation of a diverse workforce that is able to deliver health care services that meet the cultural, social, and linguistic needs of all patients.

REFERENCES


