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The Health Science Learning Community and Its' Impact on Nursing Student Performance & Retention

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Abstract

Aim: Building and sustaining learning communities (LC) is an innovative strategy to support baccalaureate nursing student performance and promote retention. Design: This study follows a quantitative correlational research design comparing nursing students in a learning community and those not enrolled in a learning community. Methods: A health science LC was formed with activities developed to build an intra-cohort support system. Ninety-three students were followed from their freshmen year through graduation. A collegiality scale was used to examine differences in perceived support of those enrolled in LCs (n = 67) and those not enrolled in LCs (n = 21). Examination of GPA as well as retention over four years was examined. Results: Despite unequal sample sizes, Levene's test of equal variance confirmed that the samples had equal variance ($F = 0.95$, $p > 0.05$). There was not a significant difference in collegiality scores between those in the LC (M = 39.58, SD = 4.91) and those not enrolled in a LC (M = 39.57, SD = 4.48; t (86) = .009, $p > 0.05$). When examining the GPAs of all students in the LC as well as those not in the LC, Levene's test of equal variance demonstrated a significant difference between the two groups ($F = 33.90$, $p > 0.05$) so t-tests were run assuming inequal variance and found that GPAs for nursing students (n = 67, M = 3.48, SD = 0.4) were significantly higher than non-nursing (n = 26, M = 2.75, SD = 1.05) in the sample (t (27.86) = −3.46, $p < 0.01$). Examining students currently enrolled at the University (n = 75), regression analysis was run to determine if participation in a LC was a predictor of GPA (M = 3.52, SD = 0.29) and revealed that enrollment in a LC predicts 9% of the variance in GPAs ($R^2 = 0.09$). Further, LC enrollment significantly predicts GPAs (B = −0.301, $p < 0.05$). A Chi-square test of independence showed no significant association between LC membership and currently being an enrolled student (X^2 (1, N = 93) = 3.7, $p = 0.054$) however, retention rate for students in a LC was 76% compared to the university's 70%. Innovative

curricular strategies to foster student success contribute meaningfully to improved nursing student retention.

Keywords

Learning Community, Nursing Students, Student Retention

1. Introduction

Student retention and success are major issues for nursing programs. Public colleges and universities are trying to invest resources to address these issues despite decreasing federal and state funding (Everett, 2020). As a result, institutions of higher learning are increasingly interested in factors which predict nursing student performance and improve retention. Coincidingly, strategies which have been found to enhance nursing student performance and retention are relevant and of great importance in nursing academia today. Learning communities are small groups or cohorts of students who share common goals and are assigned to work collaboratively with one or more faculty members. Building and sustaining learning communities is an innovative strategy to support baccalaureate nursing student performance and promote retention.

2. Review of Relevant Literature

The nursing shortage has increasingly challenged educators to prepare nursing students for a safe transition into professional practice. Nursing student attrition has escalated tremendously in recent years. In the 1990's, it was reported that attrition rates for undergraduate nursing students ranged from 15.9% to 44% (Campbell & Dickson, 1996). According to the National League for Nursing (NLN), the attrition rate for nursing students in the United States is 20%. The attrition rate for baccalaureate programs is worse. According to Merkley (2016), the attrition rate for some baccalaureate nursing programs in the United States is as high as 50% with many programs losing students in the early part of the program.

The nursing shortage supports the need to improve the NCLEX-RN pass rates and to decrease the attrition rates of nursing students. Attrition of nursing students is a concern for nursing educators because it is a significant problem affecting nursing programs throughout the United States and is associated with the critical nursing shortage. Student nurse attrition rates are not only affecting the United States, but it is also a global issue. Therefore, it is vital to understand retention strategies in addressing nursing shortages (Collard et al., 2020).

The aging nursing workforce and limited seats in nursing programs have contributed to the rapidly increasing nursing shortage in the United States. There are currently approximately one million registered nurses older than 50 years, meaning one-third of the workforce could be at retirement age in the next 10 to 15 years (Haddad, Annamaraju, & Toney-Butler, 2023). Nursing school enrollment in-

creased 3.3% in 2021 since the pandemic in the baccalaureate programs and there is a 9.6% decrease in the RN-BSN program (AACN, 2022). However, the entry-level enrollment is not growing fast enough to meet the projected demands (AACN, 2022). Nursing shortage in the United States is anticipated to reach more than 260,000 nurses by 2025 (Fisher, 2014). The future of nursing workforce is highly dependent on attracting and recruiting potential candidates to the program and providing them with the support to successfully complete the program (Shelton, 2003). Recruiting the potential nursing candidates for the nursing program, identifying the students at risk based on their academic performance and developing tools to facilitate good learning environment were major predictors of the successful completion (Jeffreys, 2007).

There is also sustained pressure to enroll, retain, and graduate minority nursing students within the nation's nursing curriculum to promote a strong, diverse nursing workforce. Non-traditional nursing students such as older students, minority students and women were at-risk for dropouts, due to language barrier, bicultural stress, pregnancy, lack of competence, and overall program dissatisfaction (Jeffreys, 2007). The result is in the inability to fill the gap of disparities in the health care due to the lack of diverse background of nursing graduates. Therefore, closely monitoring nursing student retention with emphasis on those at greatest risk of attrition is critical (Baker, 2010).

Successful completion of the National Council Licensure Examination (NCLEX-RN) is an effective tool to measure the effectiveness of nursing programs. A national study was conducted to identify interventions used by undergraduate programs that predict the success of NCLEX-RN exam and found that grade point average (GPA), Scholastic Aptitude Test (SAT), American College Test (ACT), and the use of exit assessment immensely influenced the successful completion among undergraduate nursing students (Crow, Handley, Morrison and Selton, 2004). Current inquiry into factors to predict nursing student success is important.

Nursing is a discipline that fosters the value of holistic care of the individual. A sense of belonging within the learning environment is significant to nursing student success. Students need to feel connected to a community of peers, faculty, and staff who value their contributions. This allows students to effectively integrate into the nursing profession (Andrew, Robba, Ferguson & Brown, 2011). In contrast, Lemonidou et al. (2004) suggest that if students experience negative feelings, it may demotivate them in the learning and practice settings. Thus, creating a supportive learning environment is a vital component in the development of nursing program culture.

Furthermore, a study was conducted to examine the relationship between the retention rate of nursing undergraduates and their perceived support from the faculty (Shelton, 2003). The findings revealed that the nursing students who viewed the faculty support as greater were more likely to remain throughout the nursing program than the students who perceived lack of faculty support, who were more

likely to withdraw from the program voluntarily or show poor academic performance. Similarly, students who engage in high impact practices such as being part of a learning community experience higher levels of engagement, greater levels of deep learning, and greater gains in learning and personal development (NSSE, 2021).

A study done by Bennett et al. (2025) found that participation in a nursing-specific living-learning community (LLC) increased among first-year pre-nursing students. However, the same study showed that underrepresented minority students were less likely to stay in nursing major. In addition to learning communities, nursing programs could adopt other strategies such as peer mentoring to improve nursing student retention and nursing shortage. A literature review done by Cameron (2025) found that peer mentoring programs in nursing education could improve student retention and success.

Overall, promoting a caring and supportive atmosphere in the learning environment was proven to increase the retention rate and facilitate learning of the nursing students (Shelton, 2003). A gap has been identified in the recent nursing literature on the implementation of an innovative nursing curricular model to promote nursing student success and, more specifically, improve performance and retention.

3. Methods

A group of faculty, staff and administrators designed a structure to implement a learning community model at a medium-sized public university in the northeastern, United States. Co- and extra-curricular activities were developed to strengthen and build engagement on campus and within the surrounding community with the goal of providing a strong system of intra-cohort support to augment current models of academic support, faculty advisement, and organized study groups. Additional intention was to foster professional connections, learn how to engage professionally, and become actively involved in the school and community through civic engagement and service learning. The model guaranteed a student at least three courses in one's area of interest or major in the first year, with students from their health science cohort. The primary role of faculty participating in a learning community was be to teach a course, but they were also encouraged to plan to incorporate at least one co-curricular activity and a co-curricular assignment to connect the courses over the semester and to help strengthen the community connections.

In the fall semesters of 2017 and 2018, students enrolled in a freshmen seminar course (N = 95) were surveyed using a revised collegiality scale. The institutional review board at the university granted approval prior to administration of any student surveys. Permission to utilize the collegiality scale was obtained from the author of the tool who used the tool in a higher education classroom setting. The author of the tool conducted a test-retest reliability of the tool prior to administering the tool to the students and found the tool to be reliable. The tool consisted

of thirteen Likert-scale items that assessed students' interactions with classmates, feelings of belonging, levels of comfort, academic achievement, establishment of relationships within the cohort and three demographic related questions. The Likert scale ranged from strongly disagree, disagree, neutral, agree to strongly agree. An overall collegiality score was included for each student (N = 88) from a total 95 students surveyed. Seven incomplete collegiality surveys were excluded from the analysis and only completed collegiality surveys of 88 students were included in the analysis. Demographic information collected included gender, student major, and whether the student was part of a learning community within the university or not. When it was anticipated that those students initially enrolled in the learning communities would be completing or nearing completion of their undergraduate program, student retention, current major, and grade point average (GPA) were examined in relation to the previously obtained collegiality score.

4. Results

The collegiality scale was used to examine differences in perceived collegiality of those in learning communities (n = 67) and those not enrolled in learning communities (n = 21). While the sample sizes are unequal, Levene's test of equal variance confirmed that the two samples have equal variance ($F = 0.096$, $p > 0.05$). There was not a significant difference in collegiality between those in the learning community (M = 39.58, SD = 4.91) and those not enrolled (M = 39.57, SD = 4.86; $t(86) = .009$, $p > 0.05$).

Additionally, collegiality was analyzed for differences between majors. Athletic Training (n = 6, M = 39.5, SD = 5.28), Exercise Science (n = 2, M = 39, SD = 2.83), Nursing majors (n = 78, M = 39.65, SD = 4.95), and other or undeclared majors (n = 2, M = 37.5, SD = 4.95) did not differ significantly in their perception of collegiality ($F(3, 84) = 0.133$, $p > 0.05$). Finally, after using Levene's test of equal variance ($F = 0.449$, $p > 0.05$), collegiality was evaluated for differences between male (n = 23, M = 39, SD = 5.57) and female (n = 65, M = 39.78, SD = 4.63) students, and no significant difference between groups was found ($t(86) = -0.661$, $p > 0.05$).

Cumulative grade point average (GPA) was explored in spring 2021 for those students enrolled in the freshmen seminar class in the fall 2017 and fall 2018 semester (n = 93). Levene's test of equal variance demonstrated a significant difference between the two groups ($F = 33.90$, $p > 0.05$). As such, a t-test was run assuming inequal variance and found that GPAs for nursing majors (n = 67, M = 3.48, SD = 0.4) were significantly higher than non-nursing majors (n = 26, M = 2.75, SD = 1.05) in the sample ($t(27.86) = -3.46$, $p < 0.01$). Looking only at students currently enrolled in the university (n = 75), a regression analysis was conducted to test if participation in a learning community was a predictor of students' GPA (M = 3.52, SD = 0.29). The test revealed that enrollment in a learning community predicts 9% of the variance in GPAs ($R^2 = 0.09$). We also found that learning community enrollment significantly predicts GPAs ($\beta = -0.301$, $p < 0.05$).

Finally, a chi-square test of independence showed that there was no significant association between learning community membership and currently being an enrolled student (X^2 (1, N = 93) = 3.7, p = 0.054). However, the retention rate for students in a learning community was 76%. The University reported that only 70% of the 2017 and 2018 cohorts progressed into their second year. This 6% increase in retention rate of students who belonged to the learning community may indicate that being in a learning community could increase retention.

5. Limitations

This study used a single-site design using only students from one university, a small non-learning-community group, and larger number of students belonging to a learning community. This created an unequal group size and in addition, students chose to be in the learning community. These factors limit application of the results to a broader population.

6. Conclusion

Although significant relationships were not identified in perceived collegiality of those in learning communities and those not enrolled in learning communities, differences in collegiality between health science majors, or collegiality and gender, GPA was found to be significantly higher in nursing students who participated in a learning community. Further, enrollment in a learning community was found to predict 9% of the variance in GPA and that learning community enrollment significantly predicts GPA. Finally, while there was no significant association between learning community membership and currently being an enrolled student, the retention rate for students in the learning community (76%) was greater than the university's overall retention rate (70%).

Nursing student performance and retention pose significant challenges in nursing education. These factors, compounded with the nurse faculty shortage and the overall national shortage of nurses at the bedside, pose paramount stressors on the discipline. The design and implementation of innovative curricular strategies to foster baccalaureate nursing student success is a key role of the nurse academic of today. Nurse faculty and administrators must prioritize the development and assessment of creative models aimed at supporting students and contribute meaningfully and effectively to improved nursing student retention. The results of the study indicated that learning communities in higher education could have a positive effect on overall academic performance of students and nursing programs may benefit from having learning communities.

Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

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