

## ORIGINAL RESEARCH

# Enhancing diversity to transform the future geriatric nursing workforce

Kelly D. Rosenberger\*, Lisa Hickman, Maripat King, Krista Jones

*College of Nursing, University of Illinois Chicago, United States*

**Received:** April 20, 2023

**Accepted:** June 6, 2023

**Online Published:** June 16, 2023

**DOI:** 10.5430/jnep.v13n10p17

**URL:** <https://doi.org/10.5430/jnep.v13n10p17>

## ABSTRACT

**Objective:** The growing number of older adults has placed unprecedented demands on the healthcare system while the number of geriatric nurses has not kept pace, and the gap is expected to widen. Simultaneously the older adult population is becoming more racially and ethnically diverse while the nursing workforce lacks diversity. Given the urgent need to increase and expand the number of diverse geriatric trained nurses, an innovative sustainable nursing program, Enhancing Diversity in Geriatric Nursing (EDGE) was implemented to train diverse nursing students in geriatrics thereby expanding the workforce and meeting the needs of underserved older adult populations.

**Methods:** An Integrated Geriatric Training Program was implemented to provide didactic education through established online geriatric training modules, experiential learning through geriatric clinical placements, and telehealth training. EDGE supported students with stipends. Retention was enhanced via workshops and a combined mentorship program with peer tutoring to achieve a synergistic approach. Strategies were implemented to connect EDGE scholars to employment opportunities with underserved populations. Program impact was examined with a mixed-methods approach utilizing both quantitative and qualitative data to evaluate satisfaction and inform program refinement. Data were analyzed and Rapid Cycle Quality Improvement was utilized for monitoring and quality improvement.

**Results:** EDGE resulted in the recruitment, enrollment, and geriatric training of 40 nursing students. EDGE scholars indicated program satisfaction.

**Conclusions:** Disadvantaged nursing students benefitted from the EDGE Program. Longer term, the impact of the EDGE program has a strong likelihood for improving the care of underserved older adults by a diverse geriatric-trained nursing workforce.

**Key Words:** Geriatric nursing, Training, Diverse nursing student support

## 1. INTRODUCTION

The growing number of older adults in the U.S. has placed unprecedented demands on aging services and the healthcare workforce. By 2030, 1 in 5 Americans, or 72.7 million, will be age 65 years or older, and by 2050, the number of adults age 65 years or older in the United States is projected to reach 83.7 million.<sup>[1]</sup> Unfortunately, the number of geriatrics-trained healthcare workers, including geriatric trained nurses,

has not kept pace with the growing number of older adults and this gap is expected to widen.<sup>[2,3]</sup> The population clock on April 18, 2023 records the total population of the United States of America at 334,641,500 and growing with a new birth every 9 seconds.<sup>[4]</sup> Approximately 16.5% of the population is comprised of persons 65 years and older, with a 30% increase in the 65-and-older age group since 2010.<sup>[4]</sup> Approximately, 63% of the older adult U.S. population is

\*Correspondence: Kelly D. Rosenberger; Email: [kellyr@uic.edu](mailto:kellyr@uic.edu); Address: College of Nursing, University of Illinois Chicago, United States.

female.<sup>[4]</sup> In 2016, 23% of persons 65 and older were racial and ethnic minorities: 9% were African Americans (non-Hispanic), 4% were Asian or Pacific Islander (not Hispanic), 0.5% were Native American (non-Hispanic), 0.1% were Native Hawaiian/Pacific Islander (NHPI), (non-Hispanic), and 0.7% of persons 65+ identified themselves as being of two or more races. Persons of Hispanic origin represented 8% of the older adult population. The 2018 population estimates continue to affirm that aging differs across racial groups. The number of persons older than 65 is expected to double from 46 million to more than 98 million by 2060.<sup>[5]</sup> Between 2020 and 2030, the number of older persons is projected to increase by almost 18 million as the last of the large baby boomer cohorts reaches age 65. Simultaneously, the older population is becoming more racially and ethnically diverse. Between 2014 and 2060, the proportion of Non-Hispanic white older adults is projected to drop by 24%, from 78.3% to 54.6%.<sup>[5]</sup> Many parts of the country, especially counties in the rural Midwest, lack the healthcare services needed by rural older adults. Of special relevance to our project, the increasing demand for geriatric care is concurrent with the need for a more diverse nursing workforce.

There are 3,080,100 (2022) registered nurses in the U.S., the largest discipline of licensed healthcare professionals.<sup>[6]</sup> However, fewer than 1% of registered nurses and fewer than 3% of advance practice nurses are certified in geriatrics.<sup>[7]</sup> This problem is attributed in part to a shortage of faculty trained in geriatric nursing. Many nurses lack even basic training in the care of older adults and geriatrics. Only one-third of the nation's baccalaureate nursing programs required a course focused on geriatrics in 2005, according to the Hartford Institute for Geriatric Nursing.<sup>[8]</sup> The problem is compounded by a looming shortage of nurses needed to provide care for all people, regardless of age, which will further tax the health care system.<sup>[9]</sup> Nurses are ideally positioned to meet the complex needs of older adults as the role of the nurse is centered using team-based care models which best support the care of older adults. Bodenheimer & Mason (2016) define the role of RNs has evolved in practices using team-based models of care, with their responsibilities falling under four major themes: (1) managing patients with chronic disease by using established practice protocols, (2) leading complex care management teams to improve overall care and reduce costs for patients with multiple diagnoses who are high users of services, (3) coordinating care between the primary care practice and services, especially related to transitions among hospital, primary care settings, and home, and (4) through a co-visit model, assisting practitioners in conducting acute patient visits for various conditions, including respiratory infections or urinary tract infections.<sup>[10]</sup>

Rural and urban underserved healthcare settings are projected to face a nursing shortage in the next decade as the population ages in Illinois and nationally. It is anticipated the nation will have a larger component of older Americans in comparison to other age groups. As a result, the need for healthcare providers to care for the elderly will increase. It is projected more than 400,000 RN positions will be needed in the workforce by 2024.<sup>[11]</sup> As the aging population becomes more diverse, culturally competent nurses will be needed to meet the complex health and social needs of older Americans. Additionally, care may be complicated by functional and/or cognitive deficits, mental and/or behavioral health issues, language and cultural differences, poverty, and social isolation especially in rural communities.<sup>[12]</sup> Of the over 3 million registered nurses in the U.S. less than 1% are certified geriatric nursing nurses.<sup>6</sup> Education of the future nursing workforce needs to provide a strong foundation in geriatrics including the recognition of age-related changes in older adults and communication skills with older patients and families.<sup>[13]</sup>

In addition to a shortage of geriatric trained nurses, the nursing profession is experiencing a crisis of the lack of diversity within the nursing population. According to a 2013 survey by the National Council of State Boards of Nursing, the registered nurse population comprises 19% minority nurses, whereas minorities represent 37% of the U.S. population.<sup>[14]</sup> A nursing workforce that is culturally and linguistically familiar with minorities promotes effective health care for patients.<sup>[15]</sup> The Institute of Medicine Report (IOM, 2011) indicates that increasing racial and ethnic diversity in health care is related to improved access to care for minority patients, increased patient choice and satisfaction, and improved educational experiences for students.<sup>[16]</sup>

Healthcare providers who themselves come from disadvantaged backgrounds are more likely to practice in low resourced settings and individuals who receive care from healthcare providers who are similar in background experience better healthcare outcomes. However, individuals from socially, educationally, and economically disadvantaged environments are less likely to attend undergraduate nursing programs and have lower rates of completion. Academic matriculation is influenced by multiple socioeconomic factors. Marmot reports the ten most important social determinants for enrollment in higher education are low social status, relentless stress, adversity in early life, social exclusion, stress at work, unemployment, absence of social support, addiction, poor nutrition, and an environment that promotes physical inactivity.<sup>[17]</sup> Barriers to attracting diverse nursing students include program location (not located in diverse communities and not available online), cost, accommodating student work schedules, lack of diverse faculty/leaderships, and competi-

tion for admissions.<sup>[15]</sup>

Given the urgent need to increase and expand the number of diverse geriatric trained nurses the authors implemented an innovative sustainable nursing program, Enhancing Diversity in Geriatric Nursing (EDGE) to train disadvantaged nursing students in geriatrics thereby expanding the geriatric

workforce and meeting the needs of the underserved rural and urban older adult populations. This manuscript describes the EDGE Program curriculum, objectives, and evaluation results of the student scholars in academic year 2021-2022. The EDGE student scholars' demographic, diversity and campus information is presented in Table 1.

**Table 1.** EDGE scholar demographic, diversity and campus data

UIC College of Nursing Campuses (Urban/Rural)	Total	Chicago (Urban)	RN-BSN Online (Urban & Rural)	Springfield (Rural)	Urbana (Rural)
Gender					
Male	6	3	1	1	1
Female	34	14	5	7	8
Race/Ethnicity					
American Indian/Alaska Native	2	1	1	0	0
Asian	11	7	0	1	3
African American/Black	12	4	2	3	3
Native Hawaiian/Pacific Islander	0	0	0	0	0
White	6	2	3	1	0
Hispanic/Latino	9	3	0	3	3
Total and by Campus	40	17	6	8	9

The goal of EDGE was to expand, strengthen and diversify the healthcare nursing workforce to meet the needs of the elderly in underserved rural and inner-city urban areas. To foster active learning and utilize reflective strategies, the EDGE Program objectives and activities were designed based on adult learning principles.<sup>[18]</sup> The EDGE Program also aimed to reduce healthcare disparities related to a lack of access to geriatric nursing care through the expansion of educational opportunities in evidence-based, geriatric nursing and telehealth for students from underrepresented disadvantaged backgrounds (including racial and ethnic minorities underrepresented among registered nurses) while addressing the social determinates of health (SDOH) needs among the students. The EDGE scholars completed an online anonymous survey regarding their SDOH. The appendix presents the EDGE Scholars' responses to the SDOH Survey.

## 2. METHODS

The EDGE Program was evaluated based on Kirkpatrick's Model utilizing a mixed-methods approach to inform program refinements.<sup>[19]</sup> The authors collected data via an online quantitative survey measuring EDGE scholars' satisfaction with each program activity and measuring if the objectives were met for each activity with a standard course evaluation scale: 1 (Strongly Disagree) to 4 (Strongly Agree). Additionally, the survey collected qualitative responses regarding the most effective and most important aspects, suggested rec-

ommendations for improvement and challenges experienced during the EDGE Program. The overarching objectives of the EDGE Program included: recruiting, enrolling, training, and retaining student scholars, with facilitation of employment in underserved geriatric communities upon graduation.

## 3. RESULTS

An internal recruitment pipeline was successfully developed from the existing undergraduate programs at UIC, UIUC, and UIS to recruit disadvantaged diverse BSN, RN-BSN, and Graduate Entry (GE) student scholars. The authors developed outreach and internal pipelines from existing programs to potential nursing students from disadvantaged backgrounds. Recruitment was coordinated with the Urban Health Program, the National Center for Rural Health Professions (tribal and rural student recruitment), and the Illinois Area Health Education Centers in project year one. Together, the authors focused on developing a shared vision to provide stipends and training for minorities and other disadvantaged students who are underrepresented in the nursing workforce. BSN nursing students from UIC's three campuses in Chicago, Springfield, and Urbana who completed at least two years of pre-course program work and were in good academic standing were eligible and recruited for the EDGE Nursing Workforce Diversity Training Program. RN-BSN Students were recruited through the student listserv upon their enrollment in the online RN-BSN program. The GE program is

for non-nurses who have a bachelor's degree in another field and now wish to become RNs. This program admits students in the Fall only and is a full-time program that takes seven consecutive semesters (including summers). Graduates are able to sit for the RN NCLEX exam. The Graduate Entry students were recruited through the student listserv. A total of 44 diverse nursing students were recruited and applied to become EDGE Scholars in the one-year project. The diversity data of the College of Nursing and the 40 applicants selected as EDGE program Scholars for project year one is available in Table 1 and includes the numbers for each program and each campus. The EDGE Project successfully recruited 44 applicants from a diverse range of backgrounds in the first month of the project. Recruitment activities included program announcements in student email listservs, on college websites, and presentations at university meetings. Recruitment of diverse disadvantaged students was facilitated by a strong communication system throughout the college, and the size of the nursing program at multiple campuses across the state of Illinois (urban and rural).

To ensure fair and equitable selection of qualified disadvantaged student applicants, the UIC College of Nursing utilizes an admissions system known as the Holistic Review Process. Implementation of a Holistic Review Process at the CON significantly increased the diversity of the entering nursing student class. In academic year 2010-2011, the diversity rate was 35% among newly admitted BSN and RN-BSN students. This rate has significantly increased as a result of the Holistic Review process with the academic year 2021-2022 at a diversity rate of 53% for newly admitted BSN and RN-BSN students. The Holistic Review Process includes Interviews and Reviews for every nursing student applicant before admission to the College of Nursing. The College of Nursing contracted with the American Association of Colleges of Nursing (AACN) to provide a review and technical support of our Holistic Review Process. For the EDGE Program application and selection Process, interested nursing student applicants completed the EDGE program application. The program application includes submission of a CV and a completed application. The application includes a personal statement in which students were asked to describe why they were a strong candidate for the EDGE program, focusing on two domains: their future role as a nurse in a diverse nursing workforce and intent to work with geriatric and underserved populations. The application was evaluated on alignment of the diverse applicant's interest in culturally aligned nursing and commitment to EDGE goals. Applications were reviewed and scored by a Selection Committee utilizing a Scoring Rubric. The EDGE Selection Committee conducted 2 independent Holistic Reviews for each of the 44 applicants.

The faculty used a rubric that was based on the Experiences, Attributes, and Academic Metrics (EAM Model) to score each applicant based on their CVs and personal statements. Then the committee members met to discuss the final rubric scores of each applicant and selected the 40 EDGE Scholars. All students who were selected and agree to participate in the EDGE program were required to sign a Learning Agreement confirming their commitment. The enrollment for the EDGE Project included 17 BSN/GE students from the Chicago campus, 8 BSN students at the Springfield campus, 9 BSN/GE from the Urbana campus, and 6 online RN-BSN students (see Table 1).

For the past 10 years, the CON has been guided by a strategic plan providing a clear road map for achieving diversity, equity, and inclusion goals. Efforts have included establishing the first associate dean for equity and inclusion and conducting monthly "Meet & Learn" lectures and workshops sponsored by the Nursing Equity and Inclusion Committee creating faculty training workshops and an inclusive community. EDGE successfully implemented a student financial scholarship/stipend support program to retain students. In project year one 40 students received scholarship/stipend support in the amount of \$5,300 per student with half dispersed in fall semester for 40 students and the other half dispersed in spring semester for 39 students. Note, 1 student was lost to attrition. The EDGE program provided much needed funding for students to support student retention and success. EDGE successfully developed and implemented a Mentorship Program, Peer Tutoring and Student Services to support and retain disadvantaged students. Mentorship is an important factor for student success and for reducing attrition in nursing students. EDGE used formal mentoring by faculty mentors for students to provide a social network to support student academic success and retention. All 40 nursing students enrolled in EDGE were assigned to a faculty mentor and mentoring meetings and workshops occurred virtually via Zoom in one-on-one sessions or group sessions as determined by the individual faculty and students. There are many resources offered at the CON for all nursing students such as student support services and peer tutoring. Students were able to request peer tutoring via the Student Success Program online link. Students were also able to participate in the peer-mentoring program "Mentor Mondays" and sign up for Open Lab Time to practice skills outside of assigned lab classes. The EDGE Program had ongoing evaluations of the impact of all program activities and data was collected on retention of EDGE students each semester. To date, 39 out of the original 40 EDGE scholars completed the program in project year one which is well above the national average for student retention. Data analysis was completed

each semester with Rapid Cycle Quality Improvement and the EDGE activities were refined based on data analysis and implemented in the next semester.

The EDGE Program successfully utilized the ENGAGE IL Project to provide didactic culturally aligned education and training through online modules. The EDGE Program also developed and implemented workshops and offered telehealth training for diverse students. To address the gap in diversity training among nursing students, the authors utilized online methodologies to efficiently offer the integrated diverse training program didactic content across rural and urban campuses. EDGE scholars were educated about diversity through Dr. Gruss' web-based online accredited Engage IL Program (engageil.com). This flexible, accessible, cost-effective, and innovative program uses emerging technologies to positively impact and improve training with a library of clinical educational modules written by content experts and includes training on such topics as care of vulnerable populations including the LGBTQ+ population and persons with disabilities. The outcome data collected indicates learners expanded their knowledge and enhanced their proficiency in caring for vulnerable populations; were better prepared to work in interprofessional teams; and implemented positive practice changes to provide high-quality, patient-centered care. 40 EDGE students completed the assigned fall 2021

learning modules and workshops. 39 EDGE students completed the spring and summer 2022 modules and workshops. The EDGE Program successfully offered a full complement of educational and training opportunities for students, including in-person workshops created to build a future diverse nursing workforce capable of providing patient-centered culturally aligned care. A detailed description of the EDGE Workshops activities is available upon request. During fall and spring semesters students participated in one workshop. The student workshops included Workshop 1 "Networking" providing the background of the EDGE Program and an introduction to Appreciative Inquiry. Workshop 2, "Study Skills" provided strategies for academic success. Evaluations were conducted following each workshop and used to refine the content. After the workshops and each semester, the students participated in evaluation surveys and were asked what is the value of participating in the EDGE Program. One student commented, "Thank you for allowing me the privilege of being an EDGE scholarship recipient. I really enjoyed our mentoring meetings and the excellent modules that were created. Although I have been working with the geriatric population for most of my career, the modules offered additional insight so that I can better care for them to the fullest extent possible. It has been a great experience and I thank you all for this opportunity." See Table 2 for the EDGE scholar qualitative survey responses.

**Table 2.** EDGE scholar qualitative survey responses

<p><b>List 1-2 Most Important aspects of the EDGE Program and Why:</b>  <b>EDGE WORKSHOPS:</b> "I enjoyed the workshops and having the chance to meet and hear from the faculty and staff regarding the EDGE topics. I thought that the Geriatric Modules were excellent!"</p> <p>"The most important parts of this program for me were the workshop/meetings we would have at the beginning of each semester and the learning modules; this created a nice learning community, and the modules were very beneficial to my education and understanding. I do wish we would have had one more zoom meeting after each set of modules was due so we could discuss what we learned together and explore alternate options for patients."</p> <p><b>EDGE STIPENDS:</b> "Assistance with finances to get through the BSN program. I'm so grateful for the scholarship because I honestly did not know how I'd get through the program financially."</p> <p><b>List 1-2 ways in which the EDGE Program impacted the way you will care for geriatric and/or disadvantaged patients:</b> "It has taught me a lot and made me very mindful of how to approach the geriatric population, to be patient with them and to also be very educated in all of the options available for their health so that I can teach them to make educated decisions about their lives.</p> <p>"The EDGE program has changed me by showing me how to properly care for the elderly population and to be patient with these patients as well."</p> <p>"Now I understand better what are the geriatric population needs. Made me look at the patients more holistically."</p>
---

The EDGE Program successfully implemented experiential learning through clinical placements among diverse underserved rural and urban populations and experiential telehealth training. Clinical rotations with diverse populations provide students with experiences that promote a holistic, person-centered approach and promote compassionate care, a core value in nursing. All the BSN, and GE, EDGE student clinical rotations occurred in Medically Underserved Areas (MUA) and/or Medically Underserved Populations (MUP) and students were assigned to diverse patients within their clinical placement settings. As RNs currently in practice, the RN-BSN students did not participate in clinical placements. However, their assignments focused on diverse patient issues and/or populations. Successfully implementing diverse clinical experiences specifically addresses deficits in the capacity of the nursing educational system to effectively train students in integrated culturally aligned care for diverse populations. Clinical faculty also play a critical role in students' learning of specialized skills. The CON has developed many resources available for faculty including creating a Microaggression Taskforce (MAT) to address microaggressions and discriminatory behaviors as well as guidelines for dealing with such behaviors in both the classroom and clinical settings. The MAT developed a system for reporting microaggressions and hosts monthly Meet and Learn Sessions. The November 2021 session was on Microaggression Experiences, UIC Response, and Implementation in Clinical Settings. To increase awareness and understanding of providing culturally aligned services working with disadvantaged students and patients, faculty are highly encouraged to participate in the monthly sessions. The EDGE Scholars were successfully educated on telehealth through the American Board of Telehealth's (ABT) "Excellence in Telehealth" online program. This self-guided program creates a strong foundation in telehealth. All 39 scholars completed the ABT online program. Clinical practice in telehealth was integrated into the training of all nursing students strengthening health-care access with telehealth for experiential learning. During the funding cycle, the authors leveraged existing clinical partnerships in Chicago, Springfield, and Urbana-Champaign providing EDGE students with experiential clinical telehealth opportunities.

The EDGE Program has implemented strategies to connect program scholars to employment opportunities with underserved populations in rural and urban settings through job fairs, direct employer recruitment, HRSA Workforce Connector, and LinkedIn. The CON has successfully implemented multiple strategies to connect EDGE scholars to employment opportunities in underserved rural and urban settings. The CON has networked with community partners and promoted

direct employer-employee recruitment and hosts numerous student job fairs including private/public sector employers from underserved communities. The job fairs are opportunities for academic and private/public sectors to cooperate and promote employment of diverse nurses in underserved communities. Research has indicated that the job fair is an effective method for linking qualified applicants with interested employers. Job fairs offer an opportunity for the nursing graduate to connect with potential employers and to present themselves in a positive manner to future employers. In 2021, the Nursing Career Services Coordinator was hired and was responsible for coordination of CON job fairs. The Fall 2021 Nursing Career and Internship Fair took place in November 2021 via Zoom where EDGE Scholars had the opportunity to talk one on one with over 15 different collaborative community partner organizations. The Spring 2022 Nursing Career and Internship Fair took place in April 2022 and the Summer of 2022 the 10th Annual Diversity, Inclusion, & Health Equity Career Fair was hosted by Center for Healthcare Innovation in July 2022. In addition, a Nursing Career Services Blog webpage has been set up for nursing students providing links for job postings, student internships, externships, nurse residency programs, tips on creating a nursing resume, job search resources and interviewing tips. Another strategy includes evaluating EDGE students' intent to work in underserved communities each semester and evaluate actual employment 3 months post-graduation in rural and urban underserved communities. All 40 of the EDGE Scholars initially expressed an intent to work in underserved communities. Each semester, all BSN, RN-BSN, and GE students were assessed for their "intention to work in underserved communities upon graduation." These data are gleaned from the EDGE Impact Tool which is administered at the end of each semester. Outcomes were measured by the number of scholars completing the survey that intended to work with underserved geriatric communities. Of the 22 EDGE scholars that have graduated by 12/31/2022, all have reported an intention to work with underserved and/or with rural populations on the surveys. The authors surveyed the 2022 EDGE graduates at 3 months post-graduation about their employment status and RN board examination pass rates. For those graduates that did not respond to the survey, the authors used the online public access Professional License Look-Up site to search and verify the graduate data.<sup>[20]</sup> Of the 22 EDGE 2022 graduates, 20 passed the RN board examination, are licensed as RNs with most working in geriatric underserved communities. 2 of those 22 graduates were not found in the Professional License Look-Up database nor did they reply to the survey; thus, were lost to follow up. While the remaining 17 EDGE Scholars have yet to graduate

in May 2023, the authors expect 50% or more of the graduates will be working as nurses in underserved communities with geriatric patients at 3 months post-graduation. The authors will survey 2023 graduates at 3 months post-graduation about their employment status and RN board examination pass rates (Please note, the authors intend to update the 2023 graduate information with revisions before the final document goes to print – thanks).

#### 4. DISCUSSION

The national dropout rate for nursing programs in the United States is 20% per the National League for Nursing (NLN) and the NLN Nursing Accrediting Commission set the desirable retention rate at 80%.<sup>[21]</sup> While the EDGE student retention rate is well above the national average, an EDGE Project limitation included retention. Even with academic improvement plans, workshops, scholarships/stipends, faculty mentoring and peer tutoring in place, one of the 40 EDGE Scholars failed to progress and was dismissed from the College of Nursing. Another EDGE scholar dropped out in spring semester and returned in summer due to family issues. Two of the EDGE Scholars were placed on academic probation and with the supports offered by the EDGE Program including peer tutoring, they have successfully repeated a failed course. While the CON has identified facilitators to enrollment and graduation of disadvantaged students, as reflected in the CON mission and strategic plans, some challenges encountered by many disadvantaged students who are unsuccessful are of a personal nature and cannot be addressed by recruitment and Holistic Review alone. Thus, the EDGE program included a social component to address student social and personal needs. In addition to faculty mentoring and peer tutoring, workshops were included on cultural competency and addressing microaggressions in the clinical and professional setting, thereby acknowledging and addressing the discrimination and marginalization students may experience. The workshops created a supportive environment and opportunities for group discussion and faculty guidance to foster success and resolution of barriers. The

EDGE Project team adhered to all steps of the Rapid Cycle Quality Improvement and Plan Do Study Act Processes to facilitate iterative program refinements. To date, 39 out of the original 40 EDGE scholars that have completed the EDGE program.

Another EDGE Project limitation included travel restrictions. The regional and national travel costs were not expended during the one-year project due to COVID-19 Pandemic travel restrictions. However, the EDGE team was able to collaborate, develop and deliver, and present the EDGE Program activities virtually with multimodal communication systems. The EDGE team networked and recruited diverse students and faculty with use of multimodal communications and conducted workshops and mentoring virtually.

#### 5. CONCLUSION

The EDGE Program's didactic and clinical learning activities provided geriatric training for disadvantaged and/or diverse nursing students consistent with transformative learning theory. Transformative learning principles were utilized to develop geriatric healthcare proficiencies. 39 out of the original 40 EDGE scholars benefitted from and completed the EDGE program with confirmed satisfaction in geriatric education. Longer term, the impact of the EDGE program has a strong likelihood for improving the care of underserved older adults served by a diverse geriatric-trained nursing workforce.

#### ACKNOWLEDGEMENTS

We would like to thank our students whose input made this work possible. The EDGE Project was supported by the Health Resources and Services Administration under grant number D19HP42698. This content and conclusions are those of the authors and should not be construed as the official position or policy of HRSA, HSS or the US Government.

#### CONFLICTS OF INTEREST DISCLOSURE

The authors declare that there is no conflict of interest.

#### REFERENCES

- [1] Olivari BS, Baumgart M, Lock SL, et al. CDC Grand Rounds: Promoting Well-Being and Independence in Older Adults. *MMWR Morbidity and Mortality Weekly Report*. 2018; 67: 1036–1039. PMID:30235185 <https://doi.org/10.15585/mmwr.mm6737a4>
- [2] Institute of Medicine (US) Committee on the Future Health Care Workforce for Older Americans. *Retooling for an Aging America: Building the Health Care Workforce*. Washington (DC): National Academies Press (US); 2008. Chapter 4: The Professional Health Care Workforce. Available from: <https://www.ncbi.nlm.nih.gov/books/NBK215402/>
- [3] Besdine R, Boulton C, Brangman S, et al. Caring for older Americans: the future of geriatric medicine. *J Am Geriatr Soc*. 2005; 53(6 Suppl): S245-S256. PMID:15963180 <https://doi.org/10.1111/j.1532-5415.2005.53350.x>
- [4] U.S. Census Bureau's Population Clock. 2023. Available from: <https://www.census.gov/popclock/>
- [5] U.S. Census Bureau. 2020. Available from: <https://www.census.gov/>

- //www.census.gov/library/visualizations/2019/comm/age-race-distribution.html
- [6] U.S. Bureau of Labor Statistics. 2020. Available from: <https://www.bls.gov/ooh/healthcare/registered-nurses.htm>
- [7] National Academy of Medicine. Preparing for Better Health and Health Care for an Aging Population: A Vital Direction for Health and Health Care. 2016. Available from: <https://nam.edu/initiatives/vital-directions-for-health-and-health-care/vital-directions-for-health-and-health-care-discussion-papers/>
- [8] Hartford Institute for Geriatric Nursing. 2020. Available from: <https://hign.org/>
- [9] Robert Wood Johnson Foundation. 2020. Available from: <https://www.rwjf.org/en/library/articles-and-news/2012/02/united-states-in-search-of-nurses-with-geriatrics-training.html>
- [10] Bodenheimer T, Mason D. Registered nurses: Partners in transforming primary care. Paper presented at: Preparing Registered Nurses for Enhanced Roles in Primary Care, Josiah Macy Jr. Foundation; June 20, 2016; New York, NY.
- [11] Rolen E. The Growing Need for Eldercare Workers. Retrieved from U.S. Department of Labor website. 2017. Available from: <http://blog.dol.gov/tag/aging-population>
- [12] National Advisory Council on Nurse Education and Practice (NACNEP). The 139th meeting of the National Advisory Council on Nurse Education and Practice (NACNEP) [webinar and teleconference]. 2019. Available from: <https://www.hrsa.gov/sites/default/files/hrsa/advisory-committees/nursing/meetings/2019/nacnep-may-21-2019-minutes.pdf>
- [13] Capezuti E, Boltz M, Cline D, et al. Nurses Improving Care for Health System Elders- a model for optimizing the geriatric nursing practice environment. *Journal of Clinical Nursing*. 2012; 21(21-22): 3117-3125. PMID:23083387 <https://doi.org/10.1111/j.1365-2702.2012.04259.x>
- [14] American Association of Colleges of Nursing. Enhancing diversity in the workforce. 2022. Available from: <https://www.aacnnursing.org/Diversity>
- [15] Gates SA. What works in promoting and maintaining diversity in nursing programs? In *Nursing Forum*. 2018; 53(2): 190-196. PMID:29363135 <https://doi.org/10.1111/nuf.12242>
- [16] Institute of Medicine, IOM Report. Nurse leaders, IOM report call for push to increase diversity in nursing. Princeton, NJ: Robert Wood Johnson Foundation; 2011.
- [17] Marmot M, The status syndrome: How social standing affects our health and longevity. 2004, New York: Henry Holt & Co.
- [18] Taylor DCM, Hamdy H. Adult learning theories: implications for learning and teaching in medical education: AMEE Guide No. 83. *Med Tech*. 2013; 35(11): e1561-1572. PMID:24004029 <https://doi.org/10.3109/0142159X.2013.828153>
- [19] Kurt S. Kirkpatrick Model: Four Levels of Learning Evaluation. 2018. Available from: <https://educationaltechnology.net/kirkpatrick-model-four-levels-learning-evaluation/>
- [20] Illinois Department of Financial & Professional Regulation. 2023. Available from: <https://online-dfpr.micropact.com/Lookup/LicenseLookup.aspx>
- [21] National League for Nursing. 2023. Available from: <https://www.nln.org/>