

Relationship Between Resilience, Emotional Intelligence, and Age

Cindy McGuire, EdD, R.T.(R)(M)

Purpose To explore the relationship between resilience, emotional intelligence (EI), and age in students enrolled in health care professional programs.

Methods Convenience sampling was used to recruit participants by posting a survey link in health care courses at a midsized southeastern public university in the United States. The survey included 5 demographic questions, the Schutte Self-Report Emotional Intelligence Test, and the Brief Resilience Scale. A multiple linear regression model was conducted to examine the relationship between age, EI, and resilience.

Results A total of 199 students participated in the study, consisting of 178 females (89.4%) and 21 males (10.6%). The collective study findings indicated a significant predictive relationship among EI, age, and resilience. The multiple linear regression findings were significant ($F_{2,194} = 58.48, P < .001$, and $R^2 = 0.376$), suggesting a predictive relationship among EI, age, and resilience. The coefficient of determination, R^2 , indicated that approximately 37.6% of the variance in resilience was explained by EI and age.

Discussion The shortage in the health care workforce combined with increasing reports of burnout and attrition among workers emphasizes the critical role of education programs in preparing future health care professionals. Understanding the effect of EI and age on levels of resilience might help educators develop collaborative interventions. Educators should consider incorporating EI skills development in the curriculum to influence positive retention and clinical experiences for health care students that translate to their careers in the health care profession.

Conclusion The significant predictive relationship of EI and age with resilience offers insight into the possible solution of increasing resilience skills by integrating EI in the curriculum.

Keywords | emotional intelligence, resilience, burnout, curriculum, health care education

Workplace stress for health care professionals and students has continued to increase during the COVID-19 pandemic, which is problematic because ongoing burnout and attrition among health care workers can exacerbate an already substantial staffing problem in the United States.¹⁻³ The U.S. Bureau of Labor Statistics projects a need for approximately 2 million new jobs in health care.⁴ The substantial shortage of workers in health care combined with increasing reports of burnout and attrition among workers emphasizes the critical role of education programs in preparing future health care professionals.*

As active members of the health care team during their clinical education experience, students experience

increased stress from the emotional demands of participating in clinical rotations.⁵⁻⁸ Because of the increased levels of stress, students are more susceptible to burnout and higher attrition, negatively affecting the ability to meet the growing demand for health care workers. The ability to manage emotions is an essential skill needed by health care workers to thrive in the medical community.⁹⁻¹³ However, research suggests that health care students are not prepared to handle the emotional demands associated with clinical practice.^{7,8,14}

Resilience has been shown to buffer the effect of burnout in the workplace.^{5,6,15-18} Described as the ability to adapt positively to adversity or hardship, resilience mitigates the negative effect of workplace stress.^{15,17,19} In

addition, recent research suggests a positive connection between emotional intelligence (EI) and resilience.¹⁹ EI has been shown to influence self-awareness, stress management, self-efficacy, empathy, and communication.²⁰ Students with lower levels of EI are more susceptible to burnout and attrition compared with those with higher levels of EI.^{9,10,18} This ability to cope in challenging conditions is an important consideration because no recent event has been more challenging to modern health systems than the global outbreak of COVID-19.²¹

The purpose of this quantitative study was to generate information needed to develop collaborative interventions that address stress and develop EI to positively influence retention and clinical experiences for health care students. It explored the relationship between resilience, EI, and age in health care students enrolled at a university in the southeastern United States. Existing literature suggests students who have lower levels of EI are more susceptible to burnout and attrition compared with those who have higher levels of EI.^{9,10,18,22} Therefore, this study examined age, the psychological construct of EI, and levels of resilience among health professional students. The importance of the relationship between these variables might provide a better understanding of the role of EI in health care education. This understanding can help educators develop collaborative interventions that address stress and develop EI to influence positive retention and clinical experiences for health care students. The primary research question used to guide the study was: to what extent do EI and age predict resilience among health care professional students?

Methods

A web-based survey was conducted to examine the potential predictive relationship among levels of resilience, EI, and age in health care students. The study employed a nonexperimental, cross-sectional, predictive correlational design and was designed to address the hypothesis that EI and age have a positive effect on students' levels of resilience. This study received approval from Abilene Christian University's Institutional Review Board before data collection (20-202). A copy of the institutional review board approval was provided to the participating institution

for review. After permission was granted by the participating institution and the dean of the College of Nursing and School of Allied Health at Abilene Christian University, convenience sampling was used to recruit participants by posting the survey link in health care courses.

Instruments

The survey included 5 demographic questions related to gender, race, age, and education program; the Schutte Self-Report Emotional Intelligence Test (SSEIT)²³; and the Brief Resilience Scale (BRS).²⁴

Incorporating aspects of ability and trait models, the SSEIT was developed using Salovey and Mayer's model of EI.²³ Cited more than 3000 times, the SSEIT measures a combination of ability and trait EI and includes factors such as optimism and mood regulation, appraisal of emotions, social skills, and use of emotions.²⁵ The SSEIT is a 33-item, self-report inventory and takes approximately 5 minutes to complete.²³ Composite scores were calculated by summing all items together; total scores ranged from 33 to 165, with higher scores indicating greater EI. This instrument has been documented well in research and demonstrates good reliability and validity.²³ Schutte granted permission to use the SSEIT in this study.

Developed by Smith et al, the BRS is widely used and highly reliable.²⁴ It contains 6 items to determine resilience, which is defined as "the ability to bounce back or recover from stress."²⁴ Participants were asked to rate each item using a Likert scale. Mean scores were calculated by adding items together and dividing them by 6. The BRS is free and available to use for research or education courtesy of Smith et al²⁴ and with permission from Springer.

Sample and Data Collection

Convenience sampling was used to recruit participants by posting the survey link in health care courses. Eligibility to participate in the study was determined by the participants' enrollment status in a health care professional course at the university. After approval by the institutional review board, all health care students who were enrolled in nursing associate level, nursing bachelor level, nursing graduate level, allied health, or

radiologic science courses were invited to participate in the study. Eligible students were invited to participate via an announcement in class and a link on the Moodle course homepage. The survey was available for approximately 3 weeks, from January 8 to February 1, 2021. A reminder was sent on January 21, 2021.

Data Analysis

The survey responses were downloaded from SurveyMonkey (Momentive Global Inc) and uploaded into SPSS version 25 (IBM). The variables of interest, EI and resilience, were constructed following the previously validated scoring instructions on the SSEIT and modified BRS. Cronbach α test of reliability was examined for the 2 instruments. Using George and Mallery’s guidelines, the strength of the α values was interpreted as²⁶:

- excellent: $\alpha > .9$
- good: $.8 \leq \alpha < .9$
- acceptable: $.7 \leq \alpha < .8$
- questionable: $.6 \leq \alpha < .7$
- poor: $.5 \leq \alpha < .6$
- unacceptable: $\alpha < .5$

Cronbach α for the EI and resilience assessment was .88 and .86, respectively, indicating good reliability.

Descriptive statistics were used to explore trends in the demographic variables and variables of interest. For nominal and ordinal-level variables (ie, gender, race, and education program), frequency and percentage distributions were used. For interval-level variables (ie, age, EI, and resilience), minimums, maximums, means, medians, and standard deviations were calculated.

The research question addressed in this study explores the extent that EI and age predict resilience among health care students. To address the research question, a multiple linear regression model was conducted to examine the relationship between the independent variables of age and EI, and the dependent variable of resilience. The forced entry approach was used to input age and EI into the regression model simultaneously. Before analysis, the assumptions of a regression model were tested. The F test indicates whether age and EI significantly predict resilience. Significance for the F test was evaluated at the generally accepted significance threshold of $\alpha = .05$. The coefficient of determination, R^2 , indicated how much

variance in resilience can be explained by age and EI. The β coefficient for each predictor indicated how much resilience changes by a 1-unit shift in age and EI.

Results

A total of 211 participants provided consent to respond to the survey. Twelve participants did not respond to a substantial portion of the questionnaire and were subsequently removed; all questions measuring EI and resilience had to be completed to be included in the results. The final sample consisted of 199 participants. **Table 1** presents the frequencies and percentages for 3 of the demographic variables. Composite scores were calculated on the SSEIT and BRS (see **Table 2**). EI scores ranged from 97.00 to 163.00, with a mean EI of 129.67 and standard deviation of 12.35 (see **Figure 1**).

Table 1

Participant Demographics (N = 199)	
Variable	n (%)
Gender	
Male	21 (10.6)
Female	178 (89.4)
Race	
African American	28 (14.1)
American Indian	4 (2.0)
Asian	7 (3.5)
Latino or Hispanic	10 (5.0)
Native Hawaiian or Pacific Islander	1 (0.5)
White	139 (69.8)
Two or more	10 (5.0)
Current program of enrollment	
Associate of Science in nursing	8 (4.0)
Bachelor of Applied Science in allied health	7 (3.5)
Bachelor of Science in nursing	79 (39.7)
Bachelor of Science in radiologic sciences	63 (31.7)
Doctor of Nursing Practice	5 (2.5)
Master of Science in nursing	23 (11.6)
Master of Science in radiologic sciences	13 (6.5)
Other (please specify)	1 (0.5)

Table 2
Descriptive Statistics for Scales (N = 199)

Instrument	Variable	Min	Max	M (SD)	No. of items	α
SSEIT	Emotional intelligence	97.00	163.00	129.67 (12.35)	33	.88
BRS	Resilience	1.17	5.00	3.37 (0.77)	6	.86

Abbreviations: SSEIT, Schutte Self-Report Emotional Intelligence Test; BRS, Brief Resilience Scale.

Resilience scores ranged from 1.17 to 5.00, with a mean EI of 3.37 and standard deviation of 0.77 (see **Figure 2**).

Before analysis, the assumptions of a regression model were tested. Autocorrelation was tested with the Durbin-Watson test. The finding of the Durbin-Watson test was 1.70, which approaches the value of 2 for the absence of autocorrelation. This indicates minimal to no autocorrelation between the residuals. The assumption of linearity was verified visually with a scatterplot; there appeared to be a positive trend between EI and age on resilience scores (see **Figures 3 and 4**). The assumption

of homoscedasticity was first examined with a residuals scatterplot (see **Figure 5**). Although the scatterplot lacks an obvious pattern, some clustering might be present; therefore, additional analysis was needed to address this assumption. The Glejser test uses the coefficient estimates from the regression to test for significance to identify heteroscedasticity. If the *P* value is greater than .05, the conclusion is that the data are homoscedastic.²⁷ The Glejser test revealed a coefficient significance for EI at .254 and age at .581, satisfying the assumption of homoscedasticity (see **Table 3**). The absence of outliers

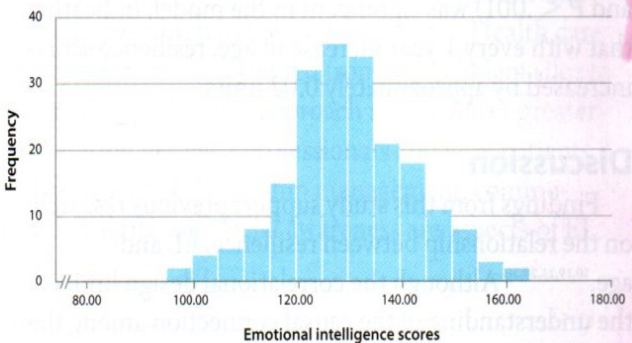


Figure 1. Histogram for emotional intelligence (EI) scores. Figure courtesy of author.

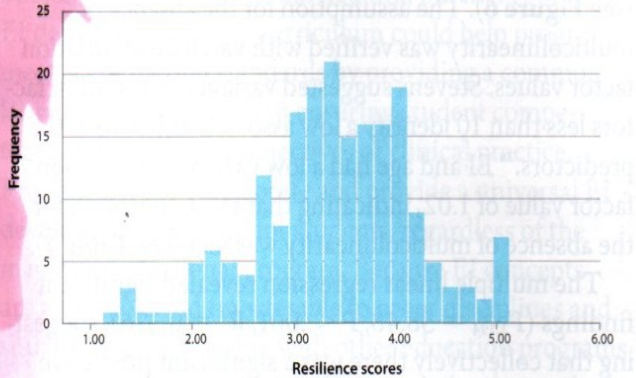


Figure 2. Histogram for resilience scores. Figure courtesy of author.

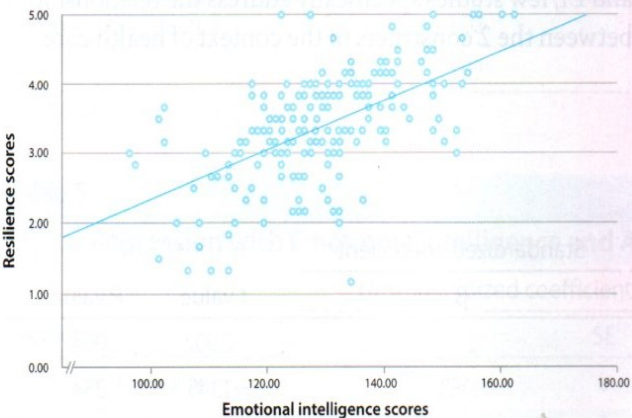


Figure 3. Scatterplot between EI and resilience scores. Figure courtesy of author.

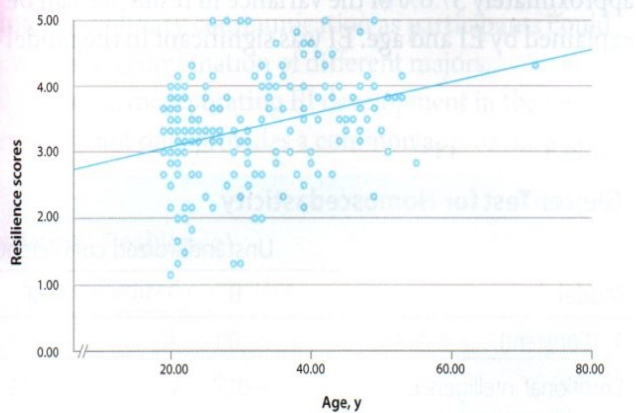


Figure 4. Scatterplot between age and resilience scores. Figure courtesy of author.

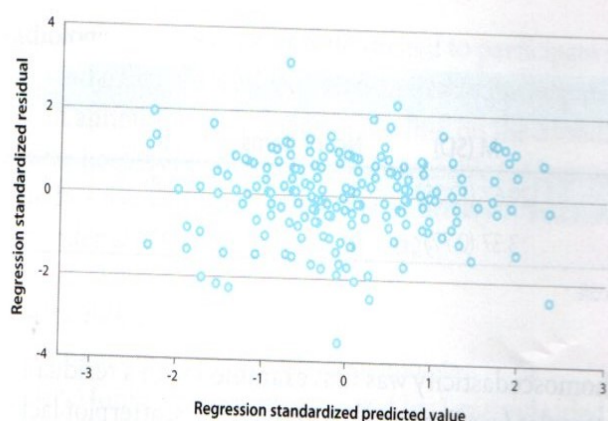


Figure 5. Residuals scatterplot for the relationship between EI, age, and resilience. Figure courtesy of author.

was verified during the preanalysis screening of the data. Using z scores for the EI and resilience scores, no outliers were identified. The assumption of normality was verified with a probability-probability plot. The data closely followed the diagonal trend line, indicating that the assumption of normality was supported (see **Figure 6**). The assumption for the absence of multicollinearity was verified with variance of inflation factor values. Stevens suggested variance of inflation factors less than 10 identify a low association between the predictors.²⁸ EI and age had a low variance of inflation factor value of 1.02, indicating that the assumption for the absence of multicollinearity was met (see **Table 4**).

The multiple linear regression revealed significant findings ($F_{2,194} = 58.48, P < .001, R^2 = 0.376$), suggesting that collectively there was a significant predictive relationship among EI, age, and resilience (see **Table 5**). The coefficient of determination, R^2 , indicates that approximately 37.6% of the variance in resilience can be explained by EI and age. EI was significant in the model

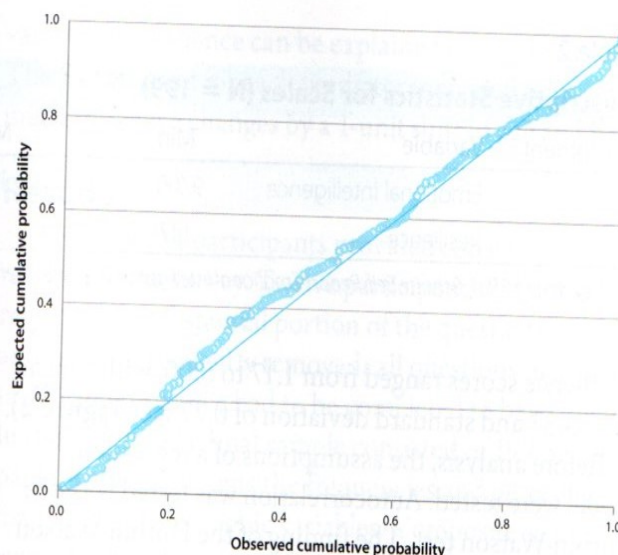


Figure 6. Normal probability-probability plot for the relationship between EI, age, and resilience. Figure courtesy of the author.

($B = .03, t = 9.21$, and $P < .001$), indicating that with every 1-unit increase in EI, resilience scores increased by approximately 0.03 units. Age ($B = .02, t = 4.23$, and $P < .001$) was significant in the model, indicating that with every 1-year increase in age, resilience scores increased by approximately 0.02 units.

Discussion

Findings from this study support previous research on the relationship between resilience, EI, and age.^{10,19,21,29,30} Although the correlational design limits the understanding of the causal connection among the 3 variables, the significant relationship supports the likelihood that EI development might increase resilience.

Despite the growing literature concerning resilience and EI, few studies specifically address the relationship between the 2 constructs in the context of health care

Table 3

Glejser Test for Homoscedasticity

Model	Unstandardized coefficients		Standardized coefficient		
	B	SE	β	t value	P value ^a
1 (Constant)	5.100	1.757		2.902	.004
Emotional intelligence	-.015	0.013	-.083	-1.145	.254
Age	-.009	0.016	-.040	-0.553	.581

^a Significant at $P < .05$ level.

education. Connor and Davidson described resilience as a measure of stress-coping abilities.³¹ Previous studies report that higher-education students preparing for careers in health care experience additional stressors specific to clinical education.^{5,7,18,32} Because stress is a likely reality for health care students, further exploration into strategies to develop stress-coping skills during education is needed. Because of this study's time constraints and limited scope, an experimental design with longitudinal data was not used. However, a more in-depth exploration of the causal relationship between the constructs could lead to a greater understanding of EI's role in developing resilience. Based on the significant association between the EI and resilience scores of health care students in this study, further analyses exploring the causal relationship between the 2 variables might identify EI development as a key to support increased resilience.

In most health care settings, the model of care has evolved. Influenced by changes in technology, insurance reform, and patient expectations, patient care has shifted to a more consumer-based approach that includes interdisciplinary collaboration.²⁰ Health care modalities have transitioned from independent silos to a more comprehensive approach that requires greater cooperation between professionals and with patients and families.²⁰ Relationship management, communication skills, and social awareness are aspects of EI

needed to perform professional roles successfully.¹³ Social capabilities associated with EI influence how an individual communicates and handles conflict, including empathy, sensitivity, adaption, and self-control.³³ Although EI is a growing topic in positive psychology, it is not well established in curriculum development in health care education, which presents an opportunity for health care education programs to incorporate the use of EI in navigating professional competencies.

Student learning objectives are determined in the curriculum and influenced by industry standards and accreditation guidelines; therefore, the incorporation of EI development in the curriculum should be an important consideration. In 2022, the American Society of Radiologic Technologists adopted a revised radiography curriculum that includes EI content as a component of professionalism in patient care.³⁴ Integrating EI development in the curriculum has several potential benefits for education programs. First, individual programs might vary on specific student outcomes defined in the curriculum, but incorporating EI development in the curriculum could help programs meet accreditation standards by providing a common language and approach to ensuring student competency in the affective objectives of clinical practice. Programs could collaborate and provide a universal EI development program for students, regardless of the major or professional program. Because EI concepts are applicable and transferable to other disciplines and situations, collaborating with other education programs would ease the burden of each program implementing independent EI development tools. This collaboration has the added benefit of facilitating and demonstrating interdisciplinary communication as participants could comprise a combination of different majors.

Second, incorporating EI development in the curriculum not only provides a common approach to

Table 4
Variance Inflation Factors for Predictor Variables^a

Predictor	Tolerance	Variance of inflation factor
Emotional intelligence	0.978	1.02
Age	0.978	1.02

^a The dependent variable was resilience.

Table 5
Linear Regression with Emotional Intelligence and Age Predicting Resilience^a

Predictor	Unstandardized coefficients		Standardized coefficient	t value	P value
	B	SE	β		
Emotional intelligence	.03	0	.53	9.21	< .001
Age	.02	0	.24	4.24	< .001

^a Overall model results: $F_{2,194} = 58.48$, $P < .001$, $R^2 = 0.376$.

developing affective skills but can help improve resilience and foster skills needed to navigate the emotional demands of clinical practice.^{7,10} Perceiving, facilitating, understanding, and regulating emotions are skills associated with EI development. In addition, incorporating EI assessment and development in the curriculum can help students improve self-awareness, stress management, self-efficacy, empathy, and communication.^{33,35} These capabilities can influence resilience, which is an individual's ability to recover and adapt positively to adversity or hardship.¹⁹ Resilience has been shown to serve as a protective barrier to burnout,^{15,36} and more resilient individuals are better equipped to navigate workplace stressors.³⁷ Because of the increased prevalence of burnout in the health care industry, accreditation agencies and education programs should evaluate current standards and consider how EI enrichment could positively affect student resilience and better prepare students for their transition to the workforce.

Another benefit of implementing EI assessment and development in the curriculum is programs can identify the need for intervention. EI assessment and development should be threaded throughout the program, not taught as a single event. As students experience change and evolve during their education program, the type of EI development they need might vary. For example, senior students who spend more time in clinical practice might need more support in building empathy or relationship management than do lower-level students who have fewer hours in clinical rotations. A lower-level student might need more help in developing self-awareness. Integrating EI assessment and development throughout the curriculum also can help identify potential problems. This information could help education programs develop collaborative EI interventions that address stress and influence positive retention and clinical experiences for health care students.

As education programs are tasked with preparing the future health care workforce, programs must recognize and acknowledge the growing trends of burnout. Although technical skills associated with patient care and anatomy and physiology are essential, education programs should not overlook the emotional demands contributing to attrition and burnout. Recent events,

such as the COVID-19 pandemic and workforce shortages, challenge education programs to consider how to best prepare students for a future health care career. Implementing EI assessment and development in the curriculum can help improve resilience, arming students with the essential tools to prevent burnout in a health care career.

Limitations

Measures used to calculate EI and resilience scores were based on self-reported responses. Self-reported data are susceptible to bias because participants might select answers they view as more socially acceptable. Also, the data from self-reported measures are based on a participant's self-awareness. Because individual responses are dependent on a person's ability to assess themselves accurately, some responses might result in misrepresentation.

Another limitation of the study was the lack of age variance in the sample. Although graduate and undergraduate programs were included, 68.8% of the respondents were aged between 19 and 35 years. The narrow representation of older participants might limit the assessment of age as it correlates to EI and resilience.

This study only included participants from 1 university, which limits the generalizability of the study's findings. The sample from this study only included students majoring in nursing, allied health, or radiologic sciences. Caution should be used when generalizing the results because the included sample might not represent the larger population of health care students.

Finally, this study employed a cross-sectional design that collected data from participants at a single point in time. This potentially could be a limitation considering participants' responses to items on the resilience and EI measure might change over time or be influenced by factors present at the time of the study. The survey was presented at the beginning of the spring semester, and participant responses might have been affected by perceived stress or situations specific to that point in the semester. Factors such as course exams and clinical rotation schedules might influence survey responses. Data collected during a longer period might provide a more comprehensive view of resilience and EI in the health care education setting.

Recommendations for Future Research

More research is needed to better understand the predictive relationship among levels of resilience, EI, and age. For example, the study could be repeated using a broader sample among multiple organizations. Although only 1 university was surveyed in this study, future studies could recruit a more comprehensive representation of health care professional programs among multiple educational institutions. This would provide a robust sample size and include additional health care programs not represented in this study.

Data could be collected in a series. The additional data collected multiple times throughout the education program's length would give researchers more information to better analyze the relationship between resilience and EI. An alternative method for collecting data related to EI could be employed. Using an EI measure that is not self-reported could improve understanding of EI factors.

The effectiveness of incorporating EI assessment and development in the health care education curriculum could be investigated to increase levels of resilience. The collection of data before and after an EI development intervention might provide a more comprehensive understanding of the efficacy of EI development in the context of education programs.

Conclusion

Although several previous studies focus on various aspects of stress, burnout, resilience, or EI, this study examined the elements of EI and age as predictors of resilience among health care students. The findings revealed a significant predictive relationship between EI and age with resilience, offering insight into the possible solution of increasing resilience skills by integrating EI in the curriculum. This study contributes to the body of knowledge by demonstrating a strong positive relationship between EI, age, and resilience in the health care students who participated in the study.

Burnout is multidimensional and influenced by several factors. EI and resilience do not guarantee immunity. However, because of the prevalence of increased stress and burnout in the medical community, students must be prepared to navigate clinical practice's emotional challenges. Programs must educate and train students to develop EI skills to increase resilience.

The intentional development of EI skills and improved resilience can better prepare students to navigate the emotional demands and challenges expected as future health care professionals.

Cindy McGuire, EdD, R.T.(R)(M), works for Northwestern State University of Louisiana in Shreveport.

Received September 1, 2022; accepted after revision November 9, 2022.

Reprint requests may be mailed to the American Society of Radiologic Technologists, Publications Department, 15000 Central Ave SE, Albuquerque, NM 87123-3909, or emailed to publications@asrt.org.

© 2023 American Society of Radiologic Technologists.

References

1. Hu W, Lavieri MS, Toriello A, Liu X. Strategic health workforce planning. *IIE Trans*. 2016;48(12):1127-1138. doi:10.1080/0740817x.2016.1204488
2. Narlock J. High job growth expected for US Healthcare – but where will the workers be? Mercer. Published November 2017. Accessed October 19, 2022. <https://www.mercer.com/our-thinking/career/voice-on-talent/high-job-growth-expected-for-us-healthcare-but-where-will-the-workers-be.html>
3. Employment Projections. 2019 – 2029. Washington DC: Department of Labor, Bureau of Labor Statistics. 2020. Accessed January 13, 2021. <https://www.bls.gov/news.release/pdf/ecopro.pdf>
4. Healthcare Occupations: Occupational Outlook Handbook. U.S. Bureau of Labor Statistics. Published September 1, 2020. Accessed January 3, 2021. <https://www.bls.gov/ooh/healthcare/home.htm>
5. Birks Y, McKendree J, Watt I. Emotional intelligence and perceived stress in healthcare students: a multi-institutional, multi-professional survey. *BMC Med Educ*. 2009;9(1):61. doi:10.1186/1472-6920-9-61
6. Jones-Schenk J, Harper MG. Emotional intelligence: an admission criterion alternative to cumulative grade point averages for prelicensure students. *Nurse Educ Today*. 2014;34(3):413-420. doi:10.1016/j.nedt.2013.03.018
7. Enns A, Eldridge GD, Montgomery C, Gonzalez VM. Perceived stress, coping strategies, and emotional intelligence: a cross-sectional study of university students in helping disciplines. *Nurse Educ Today*. 2018;68:226-231. doi:10.1016/j.nedt.2018.06.012
8. Pau AKH, Croucher R, Sohanpal R, Muirhead V, Seymour K. Emotional intelligence and stress coping in dental undergraduates—a qualitative study. *Br Dent J*. 2004;197(4):205-209. doi:10.1038/sj.bdj.4811573

9. Cofer KD, Hollis RH, Goss L, Morris MS, Porterfield JR, Chu DI. Burnout is associated with emotional intelligence but not traditional job performance measurements in surgical residents. *J Surg Educ*. 2018;75(5):1171-1179. doi:10.1016/j.jsurg.2018.01.021
10. Delgado C, Upton D, Ranse K, Furness T, Foster K. Nurses' resilience and the emotional labour of nursing work: an integrative review of empirical literature. *Int J Nurs Stud*. 2017;70:71-88. doi:10.1016/j.ijnurstu.2017.02.008
11. Hollis RH, Theiss LM, Gullick AA, et al. Emotional intelligence in surgery is associated with resident job satisfaction. *J Surg Res*. 2017;209:178-183. doi:10.1016/j.jss.2016.10.015
12. Pérez-Fuentes MDC, Molero Jurado MDM, Gázquez Linares JJ, Oropesa Ruiz NF. The role of emotional intelligence in engagement in nurses. *Int J Environ Res Public Health*. 2018;15(9):1915-1928. doi:10.3390/ijerph15091915
13. Schutte NS, Loi NM. Connections between emotional intelligence and workplace flourishing. *Pers Individ Dif*. 2014;66:134-139. doi:10.1016/j.paid.2014.03.031
14. Foster K, Fethney J, Kozlowski D, Fois R, Reza F, McCloughen A. Emotional intelligence and perceived stress of Australian pre-registration healthcare students: a multi-disciplinary cross-sectional study. *Nurse Educ Today*. 2018;66:51-56. doi:10.1016/j.nedt.2018.04.001
15. Arrogante O, Aparicio-Zaldivar E. Burnout and health among critical care professionals: the mediational role of resilience. *Intensive Crit Care Nurs*. 2017;42:110-115. doi:10.1016/j.iccn.2017.04.010
16. Gentry E. Fighting compassion fatigue and burnout by building emotional resilience. *J Oncol Navig Surviv*. Published December 5, 2018. Accessed January 3, 2021. <http://www.jons-online.com/issues/2018/december-2018-vol-9-no-12/2152-fighting-compassion-fatigue-and-burnout-by-building-emotional-resilience>.
17. Lee EJ, Sung M-H, Ahn H-K, Kim YA. Effect of incivility, resilience, and social support experienced by nursing students on burnout in clinical practice. *Korean J Women Health Nurs*. 2019;25(1):86. doi:10.4069/kjwhn.2019.25.1.86
18. Sharon D, Grinberg K. Does the level of emotional intelligence affect the degree of success in nursing studies? *Nurse Educ Today*. 2018;64:21-26. doi:10.1016/j.nedt.2018.01.030
19. Sarrionandia A, Ramos-Díaz E, Fernández-Lasarte O. Resilience as a mediator of emotional intelligence and perceived stress: a cross-country study. *Front Psychol*. 2018;9:2653. doi:10.3389/fpsyg.2018.02653
20. Shah S. The biggest ways healthcare has changed in the last century. *The Healthcare Guys*. Published February 25, 2016. Accessed September 1, 2022. <https://www.healthcareguys.com/2016/02/25/biggest-ways-healthcare-changed-last-century/>
21. Chen S, Bonanno GA. Psychological adjustment during the global outbreak of COVID-19: a resilience perspective. *Psychol Trauma*. 2020;12(S1):S51-S54. doi:10.1037/tra0000685
22. Zhao F, Ahmed F, Faraz NA. Caring for the caregiver during COVID-19 outbreak: does inclusive leadership improve psychological safety and curb psychological distress? A cross-sectional study. *Int J Nurs Stud*. 2020;110:103725. doi:10.1016/j.ijnurstu.2020.103725
23. Schutte NS, Malouff JM, Bhullar N. The assessing emotions scale. *Assessing Emotional Intelligence: Theory, Research, and Applications*. 2009:119-134. doi:10.1007/978-0-387-88370-0_7
24. Smith BW, Dalen J, Wiggins K, Tooley E, Christopher P, Bernard J. The brief resilience scale: assessing the ability to bounce back. *Int J Behav Med*. 2008;15(3):194-200. doi:10.1080/10705500802222972
25. O'Connor PJ, Hill A, Kaya M, Martin B. The measurement of emotional intelligence: a critical review of the literature and recommendations for researchers and practitioners. *Front Psychol*. 2019;10:1116. doi:10.3389/fpsyg.2019.01116
26. George D, Mallery P. *IBM Statistics 23 Step by Step: A Simple Guide and Reference*. 14th ed. Taylor and Francis; 2016.
27. Berry WD, Feldman S. *Multiple Regression in Practice*. SAGE Publications, Inc.; 1985. doi:10.4135/9781412985208
28. Stevens JP. *Applied Multivariate Statistics for the Social Sciences*. Routledge; 2012. doi:10.4324/9780203843130
29. Salovey P, Mayer JD. Emotional intelligence. *Imagin Cogn Pers*. 1990;9(3):185-211. doi:10.2190/DUGG-P24E-S2WK-6CDG
30. Van Rooy DL, Alonso A, Viswesvaran C. Group differences in emotional intelligence scores: theoretical and practical implications. *Pers Individ Dif*. 2005;38(3):689-700. doi:10.1016/j.paid.2004.05.023
31. Connor KM, Davidson JRT. Development of a new resilience scale: the Connor-Davidson Resilience Scale (CD-RISC). *Depress Anxiety*. 2003;18(2):76-82. doi:10.1002/da.10113
32. Rudman A, Gustavsson JP. Burnout during nursing education predicts lower occupational preparedness and future clinical performance: a longitudinal study. *Int J Nurs Stud*. 2012;49(8):988-1001. doi:10.1016/j.ijnurstu.2012.03.010
33. Sarkar MP, Oberoi S. Emotional intelligence: an extensive literature review. *Glob J Enterp Inf Syst*. 2018;10(4):84-95.
34. American Society of Radiologic Technologists Radiography Curriculum. Published 2022. Accessed September 1, 2022. https://www.asrt.org/docs/default-source/educators/curriculum/radiography/2022-adopted-radiography-curriculum.pdf?sfvrsn=8787b0d0_4
35. Ibrahim NK, Algethmi WA, Binshihon SM, Almahyawi RA, Alahmadi RF, Baabdullah MY. Predictors and correlations of emotional intelligence among medical students at King Abdulaziz University, Jeddah. *Pak J Med Sci*. 2017;33(5):1080-1085. doi:10.12669/pjms.335.13157
36. Ogińska-Bulik N, Michalska P. Psychological resilience and secondary traumatic stress in nurses working with terminally ill patients: the mediating role of job burnout. *Psychol Serv*. 2021;18(3):398-405. doi:10.1037/ser0000421
37. Sull A, Harland N, Moore A. Resilience of health-care workers in the UK: a cross-sectional survey. *J Occup Med Toxicol*. 2015;10(1):20. doi:10.1186/s12995-015-0061-x