

# An Evaluation of Emotional Intelligence and Pharmacy Students' Leadership and Academic Performance

 Aayna Shamsi<sup>1</sup>, Austin De La Cruz<sup>1</sup>, Matthew Wanat<sup>1</sup>, Elizabeth Coyle<sup>1</sup>, Rania El-Desoky<sup>2</sup>, Divya Varkey<sup>1</sup>
<sup>1</sup>University of Houston College of Pharmacy; <sup>2</sup>University of Western Australia

 Aayna Shamsi, PharmD  
 University of Houston  
 (713) 743-1239  
 ashamsi@central.uh.edu

## BACKGROUND

- Emotional intelligence (EI) is defined as the ability to identify and manage one's own emotions, as well as the emotions of others.<sup>2</sup>
- Studies of pharmacy students in leadership development programs have shown a strong correlation between leadership and EI.<sup>3,4,5</sup>
- Studies with nursing students have shown specific subscales of EI correlating to academic success.<sup>6</sup>



### The EQ-i 2.0 Model

A reliable self-report instrument using a mixed-model for assessing emotional intelligence with results reported in five domains and fifteen skills.<sup>1</sup>

## OBJECTIVE

To examine the association of emotional intelligence with leadership involvement and academic performance of pharmacy students.

## METHODS

### Study design / Inclusion

- Retrospective, observational study
- Included all second-year pharmacy students in the 2022-23 academic year (n=107)

### Data Collection

- EI: assessed using the Emotional Quotient inventory, version 2.0 (EQ-i 2.0) questionnaire with 133 items rated on a five-point Likert scale; results reported as a total composite EQ score and as 15 individual subscale scores
- Leadership involvement: number of officer positions in student organizations held by each student throughout their PharmD curriculum
- Academic performance: cumulative GPA for the 2021-22 academic year

### Statistical analysis

- Bivariate logistic regression using IBM® SPSS 29

## RESULTS

Table 1: Primary Outcome – EI and Leadership Involvement

EQ Measure	Officer Positions: 0 or 1, n=57 Average (Std Dev)	Officer Positions: ≥2, n=50 Average (Std Dev)	Odds Ratio	Confidence Interval
Total EQ Score	97.5 (16.4)	98.7 (19.2)	1.005	0.980-1.031
Self-Regard	96.1 (17.5)	96.8 (20.4)	0.977	0.924-1.034
Self-Actualization	104.1 (16.9)	108.1 (19.8)	1.012	0.952-1.076
Self-Awareness	107.3 (14.7)	106.3 (22.9)	1.023	0.971-1.078
Emotional Expression	95.1 (18.4)	98.3 (22.8)	1.004	0.967-1.043
Assertiveness	100.0 (13.6)	98.9 (20.4)	0.963	0.924-1.005
Independence	86.9 (17.2)	88.3 (20.5)	1.018	0.973-1.065
Interpersonal	97.8 (14.7)	100.5 (20.3)	1.026	0.983-1.071
Empathy	104.8 (15.8)	103.4 (22.4)	0.946	0.900-0.993
Social Responsibility	100.5 (17.1)	110.1 (18.9)	1.108	1.047-1.173
Problem Solving	90.5 (17.8)	91.5 (20.4)	1.032	0.980-1.086
Reality Testing	104.3 (17.0)	101.8 (22.7)	0.980	0.927-1.036
Impulse Control	100.5 (19.0)	97.1 (23.4)	0.978	0.947-1.011
Flexibility	95.5 (17.3)	92.6 (19.7)	0.953	0.915-0.993
Stress Tolerance	94.9 (16.8)	94.3 (19.7)	0.997	0.951-1.046
Optimism	99.0 (15.5)	100.6 (19.5)	0.992	0.938-1.049

Figure 2: Secondary Outcome – EI and Academic Performance

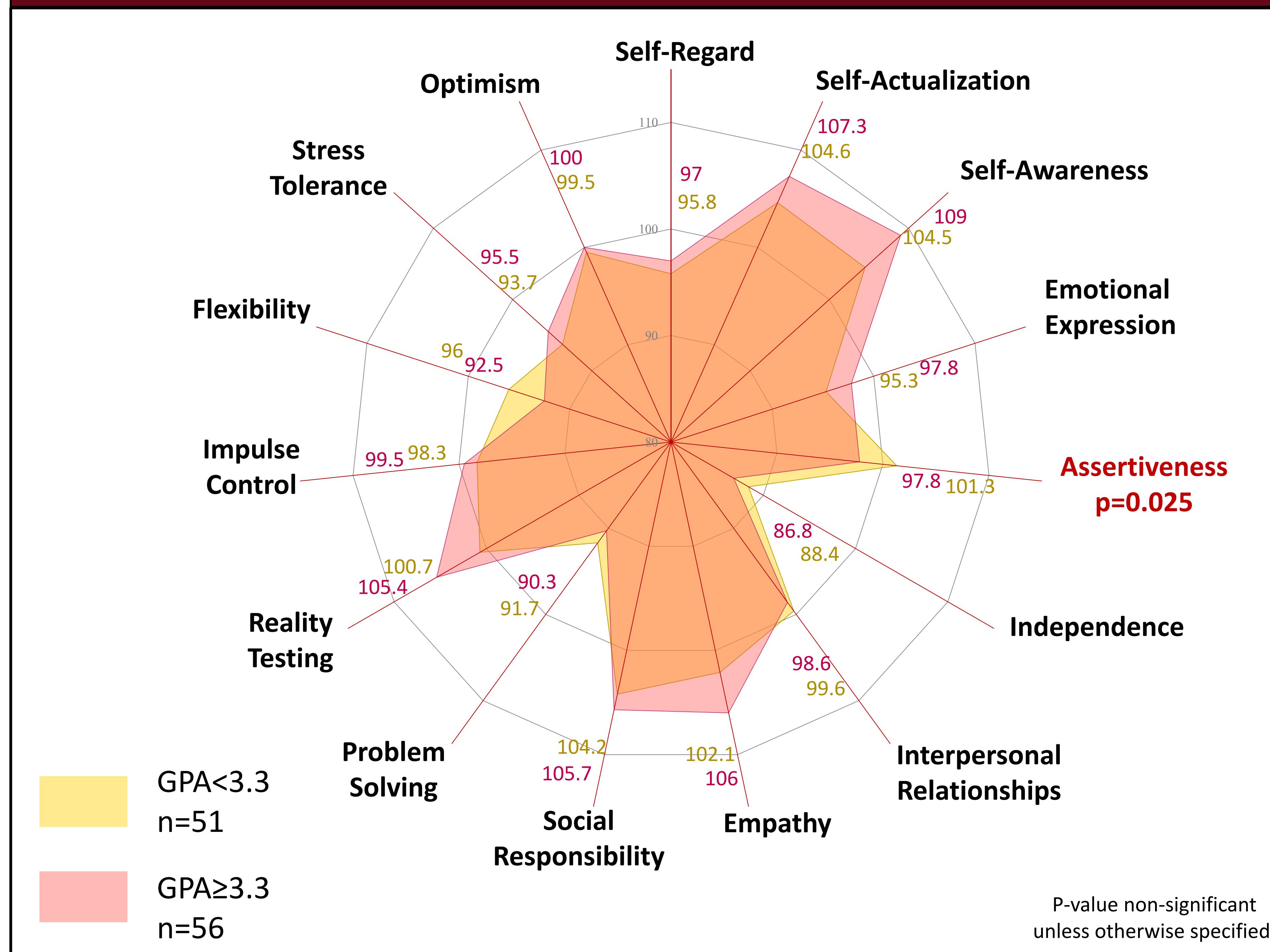
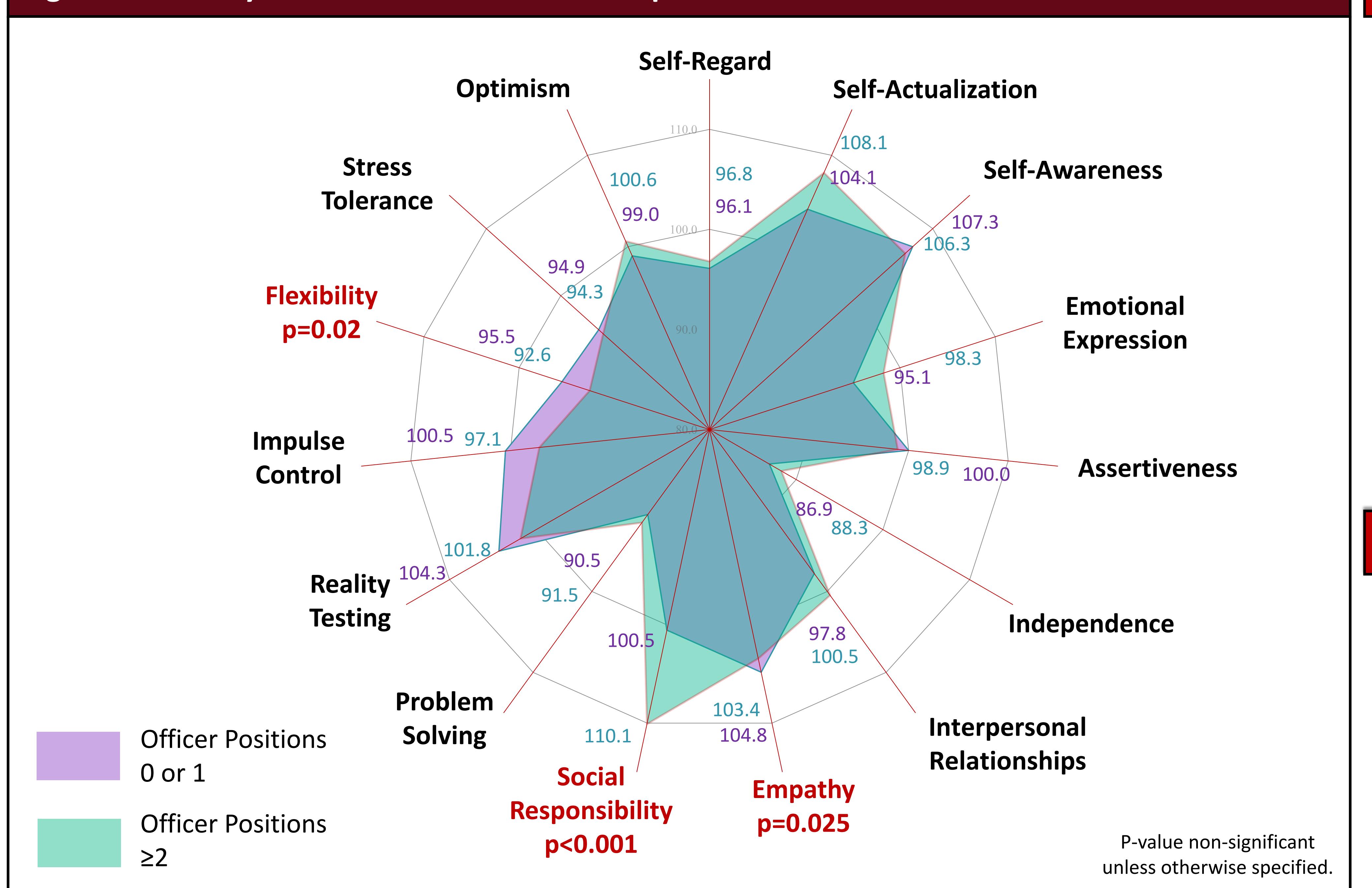


Figure 1: Primary Outcome – EI and Leadership Involvement



## DISCUSSION

- Higher usage of social responsibility and lower usages of empathy and flexibility were associated with greater leadership involvement.
- Students with higher academic performance demonstrated lower usage of assertiveness, which was unexpected.
- Like many other studies using this model, total EQ scores were not significantly associated with either outcome.
- Study may be limited by single cohort, delivery of EQ assessment in the second year, and the use of quantity of leadership positions held, which may not accurately reflect ability to lead well.

## CONCLUSIONS

- Certain EI skills may produce better outcomes at different usage levels early on in a pharmacy career.
- Study allows identification of targets for professional development.
- Future studies with multiple cohorts comparing EI skills with other outcomes of student success such as NABP pass rates, residency match rates, and employment at graduation are needed.

### REFERENCES

1. EQ-i 2.0. Emotional Quotient-Inventory 2.0. Multi-Health Systems, Inc.; 2011. Accessed 26 October 2022 before and after completing the University of Oklahoma College of Pharmacy's leadership degree option program. *Currents in Pharmacy Teaching and Learning*. 2018;10(7):911-917. doi:10.1016/j.cptl.2018.04.001
2. Mayer JD, Salovey P, Caruso D. MSCEIT: Mayer-Salovey-Caruso emotional intelligence test User's Manual. *Multi-Health Systems*; 2002.
3. Hall CM, Enright SM, White SJ, Allen SJ. A quantitative study of the emotional intelligence of participants in the ASHP Foundation's Pharmacy Leadership Academy. *American Journal of Health-System Pharmacy*. 2015;72(21):1890-1895. doi:10.2146/ajhp140812
4. Smith MJ, Wilson J, George DL, Laster K, Filippo C, Spies A. Emotional intelligence scores among three cohorts of pharmacy students before and after completing the University of Oklahoma College of Pharmacy's leadership degree option program. *Currents in Pharmacy Teaching and Learning*. 2018;10(7):911-917. doi:10.1016/j.cptl.2018.04.001
5. Buckley K, Bowman B, Raney E, et al. Enhancing the emotional intelligence of student leaders within an accelerated pharmacy program. *American Journal of Pharmaceutical Education*. 2020;84(1). doi:10.5688/ajpe8056
6. Butler L, Park SK, Vyas D, et al. Evidence and strategies for including Emotional Intelligence in Pharmacy Education. *American Journal of Pharmaceutical Education*. 2022;86(10).