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Gratitude in Medical Students and Other Markers of Well-Being

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INTRODUCTION

The well-being of medical students has become a focal point in medical education over the past decade, yet much work remains in developing ways to promote well-being and reduce burnout within the profession.

At the same time that extensive research has been examining the individual, institutional, and systemic factors that affect medical trainee and physician well-being, an accumulating body of research has emerged, demonstrating the beneficial effects of gratitude on psychological, physical, and social well-being in the general population.

Studies of gratitude show that gratitude promotes resilience, strengthens relationships, and fosters health. While gratitude shows these benefits, little is known about gratitude and its relation to well-being in medical trainees—a group that faces prolonged stress, rigorous training, and is inherently at risk for burnout.

In a previous cross-sectional analysis, the authors found a statistically significant difference in mean gratitude scores when comparing MS-IV students against MS-I through MS-III, suggesting a decline in gratitude across medical training. This project is an extension of that earlier work, reflecting a longitudinal analysis of gratitude in medical students.

OBJECTIVES

To our knowledge, gratitude in medical students has been less well-studied. Given the many stressors faced by medical students and the positive influences of gratitude observed in other populations, this study sought to determine whether there is a decline in gratitude across medical training. The study also explored relationships among gratitude and other well-being markers across time.

METHODS

Twice yearly students were asked to complete a mandatory wellness survey for program improvement purposes and were given the option to consent to use of their data for research. Assessments were administered on SurveyMonkey during in-person sessions or via email and completed anonymously.

Students were advised that the surveys were being given to assist in evaluating the impact of wellness programming on campus and to gain a better understanding of the well-being characteristics of our students.

While students were required to complete the assessments for institutional improvement purposes, the results described here are derived from the responses of students that opted in to allow use of their data for research purposes.

The survey took about 15 minutes to complete and could be accessed on a student's smart phone or laptop computer. IRB approval was obtained prior to data collection.

Measures

--The Gratitude Questionnaire--Six Item Form (GQ-6)
--Maslach Burnout Inventory--Human Services Survey
--Interpersonal Reactivity Index (IRI)
--Trait Emotional Intelligence Questionnaire (TEIQue-SF)
--The Medical Student Well-Being Index
--The Trait Hope Scale
--Patient Health Questionnaire-9 (PHQ-9)
--Generalized Anxiety Disorder-7 (GAD-7)

Participants

Participants were first, second, third, and fourth year medical students in an osteopathic medical school. Total consented participants at each time point in the study were 378, 376, 282, and 238, respectively.

RESULTS

The results report on five medical school classes given assessments at the beginning of the academic year and in April/May.

Overall response rates for each time point ranged from 81% to 53%.

A factorial ANOVA was conducted to determine if there was a mean difference in gratitude based on academic status over time among medical students. Results indicated statistically significant main effects for both academic status and time: $F_{\text{academic status}}(4, 1212) = 6.72$, $p < .001$; $F_{\text{time}}(3, 1212) = 441.35$, $p < .001$. Effect sizes were as follows: $\eta^2_{\text{academic status}} = .02$ and $\eta^2_{\text{time}} = .52$. Observed power for academic status was .99 and time was maximal (i.e., 1.00).

For three classes that were followed for two years, a profile plot revealed scores declining from time 1 to time 2, rebounding at the start of the next academic cycle, and then declining again by the end of the year. Despite differences in academic stage (e.g. classroom vs. clinic), all 3 cohorts tightly followed the same mean change in gratitude scores across time. The same downward trend in gratitude was observed in the two classes followed for just one year.

Significant correlations between gratitude and other measures across time ranged from -.104 to .557. For some variables (PHQ-9, GAD-7, MBI-EE, and MBI-DP), the correlations were significant when gratitude was high but significance was lost when gratitude was low.

Gratitude Questionnaire (GQ-6)
(McCullough, Emmons, & Tsang, 2002)

Using the scale below as a guide, indicate how much you agree with it.

1 = strongly disagree	2 = disagree
3 = slightly disagree	4 = neutral
5 = slightly agree	6 = agree
7 = strongly agree	

1. I have so much in life to be thankful for. ____
2. If I had to list everything that I felt grateful for, it would be a very long list. ____
3. When I look at the world, I don't see much to be grateful for.* ____
4. I am grateful to a wide variety of people. ____
5. As I get older I find myself more able to appreciate the people, events, and situations that have been part of my life history. ____
6. Long amounts of time can go by before I feel grateful to something or someone.*

* Items 3 and 6 are reverse-scored.

Figure 1. Gratitude scores of each cohort across time.

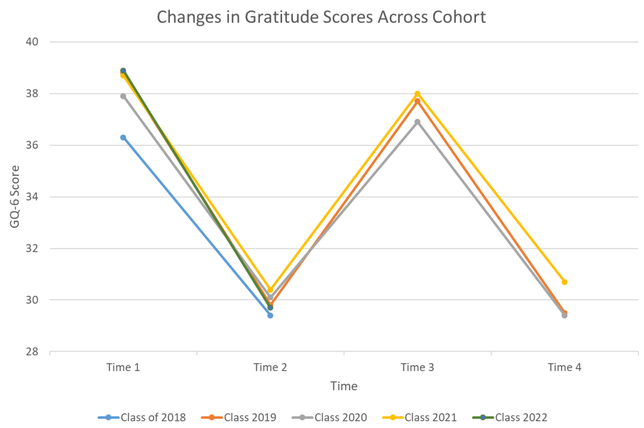

Table 1.Correlation of gratitude score and other measures of well-being.

Measure	Time 1	Time 2	Time 3	Time 4
Burnout (Maslach) subscales				
Emotional Exhaustion	-.22**	.01	-.31**	.01
Depersonalization	-.20**	-.03	-.29**	.04
Personal Accomplishment	.35**	.20**	.38**	.09
Depression (PHQ-9)	-.21**	-.08	-.38**	-.12
Anxiety (GAD-7)	-.12*	.02	-.19**	.04
Hope	.48**	.34**	.56**	.35**
Empathy subscales				
Perspective Taking	.27**	.10	.27**	.37**
Empathic Concern	.30**	.15**	.39**	.33**
Well-being (WBI)	-.11*	-.10*	-.32**	-.18**

Correlation significant at .05 (*) or .01 (**) level.

Gratitude
The mean level of gratitude for the entire sample at each time point was 38.1 (3.9), 30.0 (2.9), 38.2 (4.2), and 29.8 (3.3). Individuals with a score of 38 are demonstrating a score that is higher than 50% of those that took the measure. Similarly, a score below 38 would place an individual in the bottom half of those who completed the survey (McCullough, Appendix A).

DISCUSSION

Our findings reveal that gratitude declined across an academic year but later rebounded in the beginning of the next academic year—a finding that was consistent among three classes of medical students. Importantly, gratitude correlates with other markers, such as empathy, mood, and burnout.

LIMITATIONS

Given that participants' responses were anonymous, it is difficult to draw conclusions regarding individual changes in gratitude over time. However, the presence of similar patterns across all medical student cohorts across time suggests that gratitude fluctuates during medical training in a fairly robust fashion.

CONCLUSIONS

While the cross-sectional nature of this research limits its scope, these preliminary findings have potential implications for incorporating interventions that boost or sustain gratitude across medical training. Importantly, gratitude interventions can make a positive difference in promoting gratitude in clinical and non-clinical populations, as well as other markers of well-being, such as positive affect, sleep quality, happiness, optimism, and life satisfaction. Given this potential broad impact, further study into the nature of gratitude in medical training is warranted.

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