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A Closer look into empathy among medical students: The career eulogy as a lens

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ABSTRACT

Introduction: Empathy is widely considered to be key to being an effective physician. The measurement of empathy is important to those designing medical education. The majority of the literature on empathy is based on survey scales that ask the learner to express their degree of agreement with a series of statements. We have previously studied and published an entirely projective measure that we term a career eulogy.

Methods: We had 65 students based at a regional rural medical school campus complete measures of a career eulogy (CE) and the Jefferson Scale of Empathy (JSE) over their four years in medical school. We then calculated weighted correlations between these two instruments. We also asked students to rank 10 factors that they thought affected student responses about empathy.

Results: We found a significant moderate correlation of JSE score with mentions of compassion on the CE ($r = 0.414$, $p = 0.001$). We also found that women scored higher on both instruments. The only factor showing consensus among students was that the general outlook on life was the most likely factor explaining student empathy responses.

Conclusions: Mentions in the compassion category on the CE appear to be measuring a concept very similar to empathy on the JSE. Students expressed that factors affecting their responses about empathy are very individual and that only interventions to change the general outlook on life may affect these measures of empathy. Having used the CE for the last five years, we find it to be a brief, very useful exercise both for measurement of empathy and as a group facilitation method in our professional identity curriculum. We welcome others to use our CE instrument in larger and more diverse groups to determine its true value in both measuring empathy and facilitating group process.

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INTRODUCTION

Empathy and the ability of a physician to express compassion are considered fundamental to good doctoring. Those who would like to promote this skill in future physicians have attempted to measure empathy to both assess the effect of current medical education as well as design better methods to prepare doctors for practice.[1-5] Different authors have considered empathy as more of an affective domain or alternatively rather as more of a cognitive domain similar to curiosity. The latter use the term sympathy to describe the more affective portions.[2] The formulations we used as we designed our professional identity curriculum were that sympathy is "I feel your pain," and empathy is "I understand your suffering."[6-7]

TABLE 1. Terms used by students to describe themselves in their Career Eulogies*

Terms used by students	Cluster
Seeking excellence; knowledgeable; seeking improvement; the best; quality of care; great doctor; contributed to medical knowledge; left a legacy	Quality
Vigor; excitement; love of medicine; impact on care; persistence; never gave up; never backed away from a challenge	Passion
Empathy; kind heart; sentimental; understanding; sympathetic; every patient mattered; gave patients hope; truly cared	Compassion
Connected with patients; puts patients' needs first; made personal connections; personable	Patient relationships
Always happy; my life was a gift; the journey was fun; the joy of practice; always had a smile; positive attitude	Enjoy life
Brought better care to my town; legacy in my town; very involved in community; educated the community	Community
Taught colleagues; taught community members about their health; hosted medical students	Teacher
Genuinely sought to help others; payment not required	Service
Blessed to serve; faith is central; servant of God; displayed faith through care	Calling
Loyal to family; puts energy into relationship with spouse; love of family	Family
Co-worker, colleagues, fellow physicians	Coworker

*Modified from Reference 13.

Previous publications have used a standard empathy survey including a series of statements where the learner expresses degree of agreement with each.[8] The surveys allow for reproducibility and some mathematical precision. There has been more recent controversy as to whether the minor changes of 0.2 to 0.5 in an individual question really have any meaning, but these scales are still considered the most quantitative method for measuring empathy.[9-10]

As part of ongoing assessment of our professional identity curriculum, we have begun to use an exercise that we term a career eulogy.[11-13] Rather than forcing the learner to think about empathy and complete the scale, our method is entirely projective. We present the learner with a blank page and some general instructions so that empathy can be included in their future eulogy or not based on how important it seems to the learner at the time. Table 1 shows the phrases and categories we use when coding the free text responses in the eulogies.

We have previously reported the use of this instrument with pre-medical college students and a small group of students just as they started medical school.[12-13] The focus of this report is a larger group of medical students distributed across all four years of medical school.

Our prediction was that students who had higher empathy scores on survey scales would mention our category of compassion more frequently during their annual career eulogy exercises. In smaller groups, we have shown that women reported higher empathy scale scores than men, as was the case for previous publications using scales.[1-3,8,10] In addition to gender, we also were interested in whether those from small towns and those who later chose family medicine as a career would mention compassion more frequently. Our previous qualitative work showed that overall, students mentioned compassion as the most frequent of the 11 categories in their career eulogy. Women were more likely to include terms that we classified under compassion. Those from small towns also showed a higher frequency of including compassion, at almost 70%. Although it was a small group, those choosing family medicine as a later specialty actually mentioned compassion less frequently than those choosing other specialties. The future family medicine group more frequently mentioned enjoying life, family, and concern for coworkers.

TABLE 2. Demographics of students

		Freq	(%)
Gender	Male	28	(43%)
	Female	37	(57%)
Race	White	61	(94%)
	Asian	4	(6%)
Age at Matriculation	Median	22	
	Range	20 - 34	
Rural[a]	Yes	51	(78%)
	No	14	(22%)
Very Rural[b]	Yes	41	(63%)
	No	24	(37%)
Graduates chose Family Medicine as specialty	Yes	14	(38%)
	No	23	(62%)
	Still in medical school	28	

[a]Rural was defined as a hometown population of <30,000 and a non-metro Rural Urban Continuum Code (RUCC).[21]
[b]Very rural was defined as a hometown population of <15,000 and a non-metro Rural Urban Continuum Code (RUCC).[21]

Our goal with this study including a larger number of students and multiple annual career eulogies was to use quantitative methods to determine any correlations and differences. We sought to determine correlations between frequency of mentions of compassion in the career eulogy with an established scale measure of medical student empathy. Secondarily, we sought to collect opinions of the learners as to what they thought affected their responses on the standardized empathy scale.

METHODS

We used the Jefferson Scale of Empathy (JSE) as the standardized empathy scale for comparison.[1-3,8,10] Medical students completed a career eulogy (CE) and JSE at one sitting in each of four years of training at a rural regional campus of a medical school.[14-15] At the end of each academic year or at the beginning of a new academic year, they were allowed time to complete both instruments. For the CE, we asked the participants to "Imagine that you are ready to retire from medicine in the distant future. In about 50 words, write a short speech outlining what you would like to be said about you at the retirement ceremony." We report 202 observations from 65 students evenly distributed across the graduating classes of 2017 through 2023 which is all the students in those classes.

After the two exercises were completed, we asked

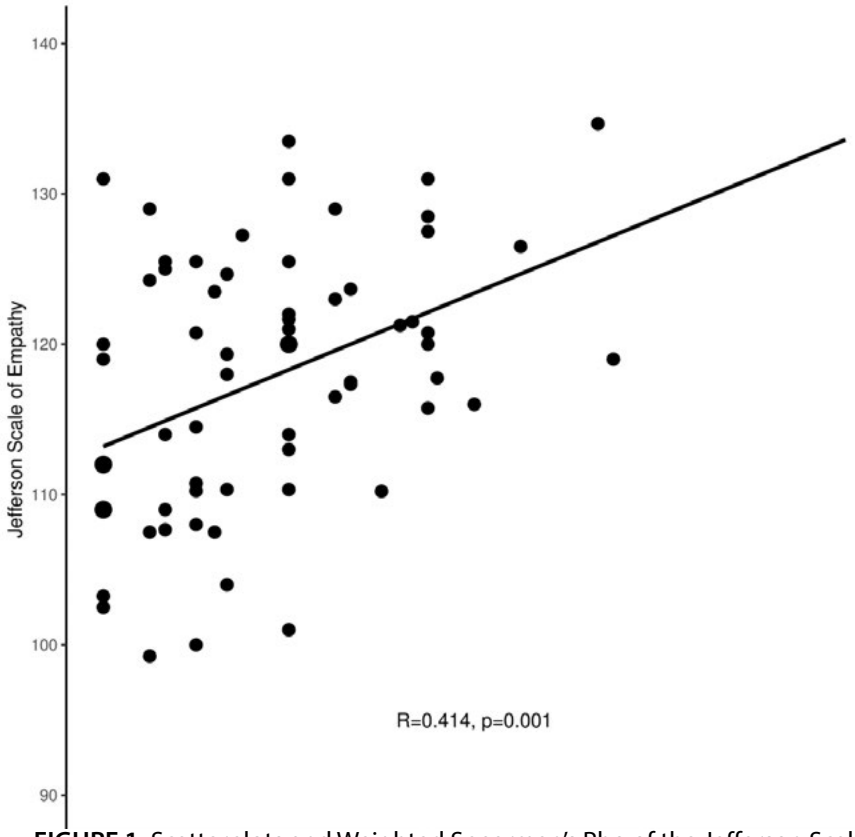

FIGURE 1: Scatterplots and Weighted Spearman's Rho of the Jefferson Scale of Empathy versus CE Compassion (averaged across Baseline, Post M1, Post M2, Post M3, and Post M4 time period when data was available). Larger circles represent more than 1 student's measurements on the X and Y location.

the students to rank 10 factors that may have affected how they answered the empathy scale. We developed these factors during focus groups with the family medicine residents who participated in our professional identity curriculum.[7] These included two items that could be considered traits, 4 that were described as daily irritants that could affect empathy if it were a state that could change frequently, one that specifically addressed confidence in the doctor role, two that addressed the negative effect of the "hidden curriculum",16 and lastly the effect of continuity of patient care. Students were asked to rank ten items with 1= most important and 10= least important in response to "I think the following explains the empathy score of an individual student."

To address the validity question, in addition to the JSE and the CE category of compassion, we also chose 2 other categories from the CE coding set to seek correlations. These were the patient relationships category, which was expected to track with compassion as an indicator of convergent validity and also the quality category, which we expected to show no correlation with the JSE indicating divergent validity.

CEs were coded using categories and methodology previously reported.[12] CE and JSE results were matched by respondent and completion date and then entered into Microsoft Excel (Part of Microsoft Office Professional Edition) [computer program] Microsoft; 2016.

We present demographic data on the study population as frequencies and percentages. To assess the validity of the JSE score correlating with the compassion category on the CE, we calculated weighted correlations using ranks of averages..[17-18] resulting in the equivalent of Spearman's Rho (since the CE observations were not normally distributed) using R 4.0 (The R Project for Statistical Computing) [computer program], R Core Team; 2020 and the weights package.19 Scatterplots were created using R 4.0, the ggplot2 package.[20]

We used the Independent Sample T-Test or Mann-

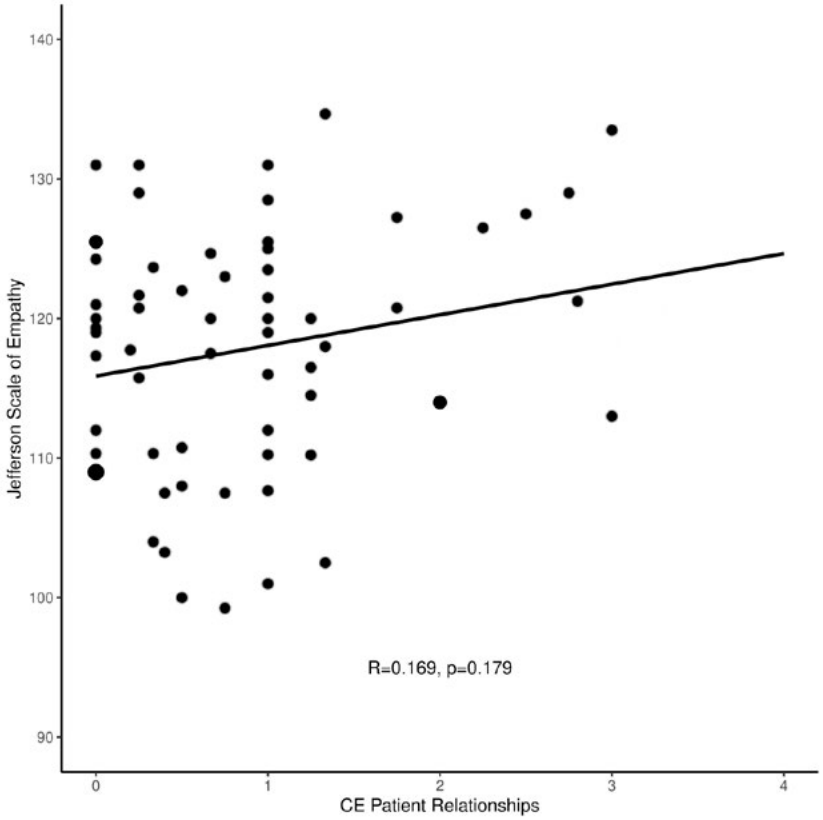

FIGURE 2: Scatterplots and Weighted Spearman's Rho of the Jefferson Scale of Empathy versus CE Patient Relationships (averaged across Baseline, Post M1, Post M2, Post M3, and Post M4 time period when data was available). Larger circles represent more than 1 student's measurements on the X and Y location.

Whitney U statistic to compare the JSE scale and the CE categories (averaged across all times) by demographic variables shown as means and standard deviations. The significance level was set by convention at $p<0.05$. Data was analyzed using SPSS version 26 (IBM Corp. Released 2019. IBM SPSS Statistics for Windows, Version 26.0. Armonk, NY: IBM Corp) and R 4.0 (version 4.0, R Core Team, 2020).

RESULTS

The demographics of the study population are shown in table 2. Our students are largely rural and white, with slightly more women than the typical medical student population. The high percentage of our students choosing family medicine is almost 4 times the national average.

Figures one through three show the scatterplot of the mean JSE scores versus the mean number of mentions for compassion, patient relationship, and quality for the multiple measures completed by the 65 students at varying levels of training. There is a significant moderate to large correlation of JSE with compassion ($R=0.414$, $p=0.001$) and a small, non-significant correlation with patient relationships ($R=0.169$, $p=0.179$) and a negligible, non-significant correlation with quality ($R=0.056$, $p=0.660$).

Table 3 shows mean JSE scores and mean number of mentions for the same three CE categories across the four subpopulations we emphasized. Gender showed a significant difference with JSE, compassion and patient relationships, but no other differences in subpopulations nor any with quality were significant.

Figure 4 shows the ranking of the 10 factors that the learners thought explained their empathy scores, with general outlook on life clearly the highest rank with a narrow range. All the others showed very wide ranges, with time spent in clinic the lowest ranking factor.

DISCUSSION

Our results show that the compassion category in the career eulogy appears to capture a concept similar to empathy as reported by the JSE. This is noteworthy, as there was no prompt to the learner to consider empathy as was by necessity with the JSE. We also found that the CE category of patient relationships tracked with JSE scores for women, but neither the patient relationship nor quality categories tracked with JSE scores, suggesting these categories are measuring something different. As we coded and classified almost 300 career eulogies to develop the categories used in previous reports, we chose to classify compassion as something that an observer could determine without considering the patient response. The category of patient relationship required the patient's involvement in

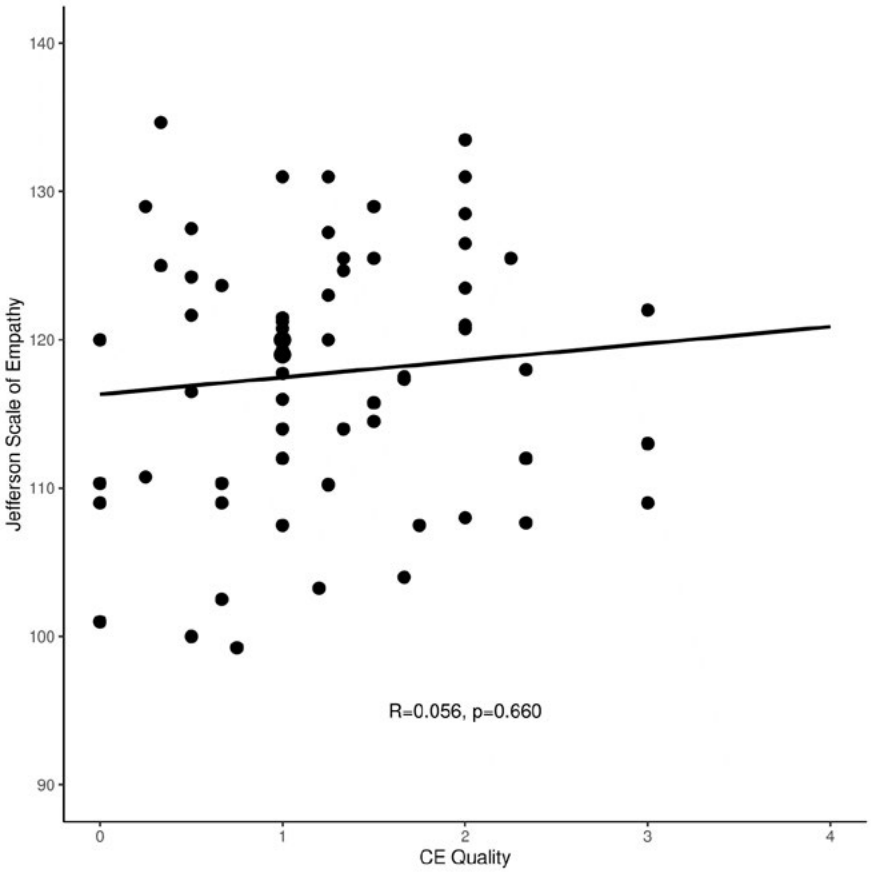

Figure 3: Scatterplots and Weighted Spearman's Rho of the Jefferson Scale of Empathy versus CE Quality (averaged across Baseline, Post M1, Post M2, Post M3, and Post M4 time period when data was available). Larger circles represent more than 1 student's measurements on the X and Y location.

the determination. Future studies with larger groups may determine in what ways these two concepts differ.

We also found that women scored higher on the JSE, as almost all of the previous JSE studies have found and had more mentions of compassion and patient relationships, further supporting that the CE was measuring something very similar to the JSE. We did not find the expected higher JSE scores and mentions of compassion or patient relationships in the subgroups choosing family medicine and in those from small towns. It is possible that we missed real differences because of the type 2 error inherent in comparing small groups. Alternatively, it could be that while these subgroups may differ in other ways, the 4 measures we used in this study did not capture the differences. We will continue to study this issue with larger groups and use the other categories on the CE such as community and service, which occur less frequently.

		Jefferson Empathy Scale[a]		CE Compassion[b]		CE Patient Relationships[b]		CE Quality[b]	
		Mean	(SD)	Mean	(SD)	Mean	(SD)	Mean	(SD)
Gender	Females	119.68	(8.61)	1.03	(0.65)	1.10	(0.92)	1.20	(0.73)
	Males	115.19	(8.28)	0.71	(0.68)	0.52	(0.46)	1.30	(0.74)
	P-Value	0.038		0.031		0.011		0.531	
Graduates chose Family Medicine as specialty	Yes	116.69	(9.10)	0.90	(0.86)	0.75	(0.86)	1.13	(0.60)
	No	116.47	(7.56)	0.85	(0.53)	0.88	(0.68)	1.28	(0.51)
	P-Value	0.936		0.750		0.353		0.386	
Rural[c]	Yes	118.88	(7.30)	0.92	(0.56)	0.64	(0.45)	1.33	(0.88)
	No	117.38	(9.14)	0.88	(0.72)	0.92	(0.88)	1.21	(0.69)
	P-Value	0.552		0.619		0.505		0.788	
Very Rural[d]	Yes	117.64	(8.51))	0.89	(0.69)	0.77	(0.75)	1.22	(0.69)
	No	118.14	(9.67)	0.89	(0.67)	1.15	(0.95)	1.34	(0.91)
	P-Value	0.852		0.915		0.190		0.766	

[a]P-Values based on Independent Sample T-Test
[b]P-Values based on Mann-Whitney U test
[c]Rural was defined as a hometown population of <30,000 and a non-metro Rural Urban Continuum Code (RUCC).21
[d]Very rural was defined as a hometown population of <15,000 and a non-metro Rural Urban Continuum Code (RUCC).21

TABLE 3. Jefferson Scale of Empathy Scores and Career Eulogy Responses

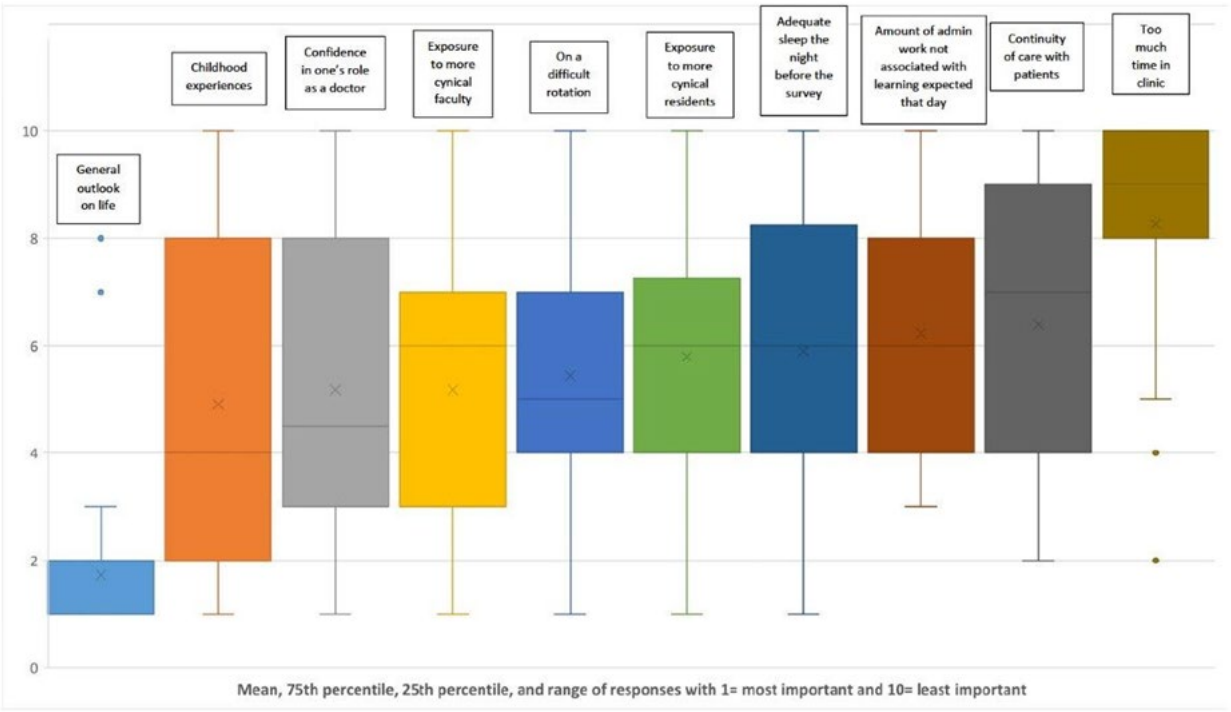

FIGURE 4. Students were asked to rank ten items with 1= most important and 10= least important in response to "I think the following explains the empathy score of an individual student." (N=30)

Our results on the learners' opinions about which factors explain their answers on our measures give a glimpse into the issue of whether empathy is a stable trait or rather a state that can change with current circumstances. While the "general outlook on life" could change based on life experiences or therapy, it is the most likely to fit the category of a trait. Childhood experiences likewise would more likely result in a trait. Exposure to more cynical faculty and residents addresses the effect of the "hidden curriculum" felt to be pervasive and powerful.[16] Some writers have blamed the episodic nature of medical training for the decline of empathy during the clinical years, but our students did not rank continuity of care (or the lack of it) highly. However, except for a student-directed free clinic, these students had not yet experienced much continuity of care. Even so, using the same 10 factors among 33 of our residents, it was still ranked as seventh in rank order (unpublished data). The other items are issues that have been described as daily irritants, and the issue of confidence in one's role as a doctor is a unique potential explanation of measures of empathy. Our preliminary results support that some of our students and residents see empathy as more of a trait than a state, but efforts to brighten the outlook on life over a longer time may be wise.

The consensus among our students that one's general outlook on life is the strongest factor affecting measures of empathy fits well with recent ideas of the interplay of empathy and burnout. There is a building consensus that contrary to previous ideas, a drop in empathy (compassion) occurs prior to increasing burnout rather than the inverse.[22-25] So perhaps while decreasing practice environment stressors (EMR, staffing, volume requirements) are important and brief mindfulness exercises are useful, sustained efforts in "compassion training" might be the best way to address burnout. Reports of this training fall into two major categories. The first could be classified as "fake it until you make it" techniques. This style has trainees practice compassionate

statements until they become second nature so that they can use them easily in actual patient encounters. Results show that patients perceive these interactions as more positive, and remarkably, the students or physicians report more positive emotions and less burnout.[26-30]

The second style of compassion training focuses on the internal emotions of the physician, with personal growth activities and exercises to build the concept of personal agency and sense of control resulting in less burnout and better patient ratings.[23,31-32] The similarity of both of these training styles to the techniques of cognitive behavioral therapy (CBT) is clear. The underlying concept of CBT is that when more positive "self talk" is substituted for previous negative thoughts generated from faulty beliefs, the negative emotions themselves dissipate. Those undertaking such training activities may find the CE useful for both process facilitation and measurement of effect.

LIMITATIONS AND STRENGTHS

As with all single site studies, ours is subject to selection bias. Almost all our students have rural roots and are self-selected and faculty-selected to be at a small regional rural campus. The classes reported here have slightly more women than most medical school classes, and female gender is known to be associated with higher scores of empathy. That was not necessarily a negative when we were hoping to have a large enough sample size to compare the JSE scores and compassion mentions on the CE. Larger studies in more diverse populations will give a better idea of the value of the CE in measuring empathy.

Our results also are subject to type 2 error because of small group sizes. A strength is the richness of the projected self-description of professional identity and the possibility with larger groups to find differences in demographic and future specialty choice. Larger groups will also allow closer looks at the differences between mentions of compassion or patient relationships on the CE. With larger groups, we can also begin to look at the other categories in the CE coding such as quality and passion, which are near the top of overall frequency as well as community, family, and service, which students mention less frequently.

To compare JSE scores and CE categories by demographic categories, we used the average across time for all data available. A few students did not complete a measure each year, potentially missing changes over time. However, our findings of gender differences similar to those in previous studies support that averaging across time is valid.

CONCLUSION

We have found the career eulogy to be an effective method of both measurement and process. Our initial results show that mentions of compassion seem to be measuring a concept very similar to empathy on the JSE. The JSE has very strong mathematical and construct validity, but it is not commonly used as a method of reflection, and it is expensive.

The CE requires 5-7 minutes and we have used it in our professional identity (PI) curriculum for 5 years as a reflective mindfulness exercise at the beginning of a session. Then before each student places their CE into the envelope confidentially to be coded later for research purposes, they are encouraged to take a photo of it using their phone. Then at several times during the year, they review it at the beginning of PI sessions and ponder the question "How are you progressing to reach what you want said about you at retirement? What's working and what's not?" Although this reflection is in silence and self-revelation is not expected or encouraged, inevitably, discussion ensues. As we have reached the point now where most graduating classes have one CE for each of the 4 years of medical school, we also present their originals to them at graduation as a "PI journey portfolio."

Given the very wide range of rankings of most of the items our students report as affecting measures of empathy, it seems to be a truly nebulous and individually defined concept, and further study of larger populations' opinions is needed. We welcome others to use the CE and report their results.

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