Effect of Reflective Writing on Burnout in Medical Trainees

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Abstract

Introduction: Narrative Perspective and Reflective Writing is a fourth-year elective at the Donald and Barbara Zucker School of Medicine at Hofstra/Northwell. This is the first study to show through both quantitative and qualitative data that medical students who participated in such a course experienced lower burnout. Preliminary data suggests that the course also fostered increased resilience.

Methods: This longitudinal course was offered to all fourth-year medical students as an elective. Assessments were administered electronically to students before starting the course and following the final session. Pre- and post-course questionnaires consisted of items from the Maslach Burnout Inventory (MBI) for both cohorts. The Connor-Davidson Resilience Scale (CD-RISC) was added to the questionnaire for the second cohort only.

Results: There were statistically significant reductions in emotional exhaustion and depersonalization from pre- to post-course assessments. There were modest, but not statistically significant, increases in the MBI subscale of personal accomplishment subscale and on the Connor-Davidson Resilience scale. Qualitative student feedback was overwhelmingly positive.

Discussion: These findings suggest that engagement with health humanities can reduce burnout and possibly increase resilience in medical trainees. The course is well-aligned with efforts to incorporate communication and empathy training into postgraduate and continuing medical education. It is an enriching and effective intervention that can reduce burnout at a critical point in students' medical training.

Limitations: Limitations of our study are discussed, as are strategies to control for confounding variables. The challenges faced in implementing more humanities-based courses into medical education are briefly presented.

Conclusion: This is the first study to show both quantitatively and qualitatively that fourth-year medical students participating in a health humanities course experienced reduction in burnout. The positive impact of this humanities-
based elective on medical trainees at a crucial juncture of their careers should prompt more widespread implementation of humanities-based electives in medical education.

**Keywords:** narrative medicine; health humanities; medical education; burnout; resilience; reflective writing; curricular reform; curriculum evaluation

**Introduction**

Narrative Perspective and Reflective Writing was introduced in 2016 as a fourth-year elective for students at the Donald and Barbara Zucker School of Medicine at Hofstra/Northwell. The course is aligned with the guiding principles of the medical school, which values reflection and self-assessment as part of the student's transformation into a physician. It was also intended to promote medical student wellness, resilience, and empathy.

The course aimed to develop medical students’ capacities for continuous reflection and self-regulation through the lens of health humanities and reflective writing. Students engaged with a wide variety of media, ranging from novels and short stories to TED Talks, poems, comics, documentaries, visual arts, and musical compositions. The impact of a health humanities curriculum on burnout and resilience has not been directly assessed until now.

It was hypothesized that students who completed this course would experience a reduction in burnout and an increase in resilience, as measured by pre- and post- course administration of the Maslach Burnout Inventory (MBI) and Connor-Davidson Resilience Scale (CD-RISC), and by course evaluations and exit interviews after the last session.

**Methods**

**Narrative Training Method**

Narrative Perspective and Reflective Writing is a fourth-year elective course that consists of 24 individual sessions over the course of the academic year, starting in July and ending in March. This course has been implemented for two consecutive years at the Donald and Barbara Zucker School of Medicine at Hofstra/Northwell, with 9 students enrolled from 2016 to March 2017, and 9 students enrolled from July 2017 to March 2018.

Students prepared for weekly sessions by responding to a writing prompt inspired by a story, poem, or documentary. Each session was led by a member of the interdisciplinary faculty, providing a broad range of narrative perspectives. The format of each session was similar: the prompt was read aloud twice, following which there was time for individual reflection. Students and faculty shared their written responses and responded to one another with constructive feedback, which often led to a rich discussion. Each student was required to participate in at least 15 of the 24 sessions, either in person or via telephone, with the latter option offered to accommodate students traveling for away electives and/or postgraduate interviews.

**Data Collection**

**Standard Course Evaluation.** After the last session of the course, each student completed a standard School of Medicine course evaluation form, providing quantitative feedback by rating ten statements on a scale from 0-5, with 0 indicating "Strongly Disagree" and 5 indicating "Strongly Agree". The evaluation form (shown in Table 1) contained the same 10 items for both cohorts.

**Exit Interviews.** Students participated in an exit interview with the course director after the last session, during
which they provided feedback on the course from both a content and process perspective. Students were also asked 
to reflect upon the role narrative medicine might play in their future careers.

**Burnout and Resilience Scales.** Electronic surveys were sent via e-mail to course enrollees prior to the first session 
and after the last session. The surveys consisted of the Maslach Burnout Inventory (MBI) for both cohorts. 
The Connor Davidson Resilience Scale (CD-RISC) was added to the survey for the second cohort.

**Maslach Burnout Inventory (MBI).** The MBI is the most commonly used measure of burnout and has been 
validated by extensive research with many different populations. Students were asked to read 22 statements and then 
indicate how often they relate to each statement, with 0 = "Never" and 6 = "Every day." The MBI measures three 
dimensions of burnout: emotional exhaustion (9 items), depersonalization (5 items), and personal accomplishment (8 
items). Each sub-scale has a separate scoring guide, shown in Table 2. Emotional exhaustion and depersonalization 
are positively correlated with burnout, with higher scores indicating greater burnout. In contrast, perceived personal 
accomplishment is inversely proportional to burnout, with higher scores on the personal accomplishment subscale 
indicating less burnout (Maslach and Jackson, 1981).

**Connor-Davidson Resilience Scale (CD-RISC).** Items from the CD-RISC were added to the questionnaires 
administered to the second cohort of students (2017-2018). Students were asked to read 25 statements and rate them 
from 0 ("not true at all") to 4 ("true nearly all the time"). Total scores ranged from 1-100, with higher scores 
reflecting greater resilience. The CD-RISC is a validated measure of resilience with high internal consistency 
(Cronbach’s α= 0.89), high test-retest reliability, and sound psychometric properties (Connor and Davidson, 2003).

**Results**

**Standard Course Evaluation**
All 18 students (100%) completed the School of Medicine Course Evaluation, and the mean course rating was 4.97 / 
5.00, as shown in Table 1. Qualitative feedback revealed that students gained a deeper appreciation for the 
therapeutic and cathartic value of reflective writing and were pleasantly surprised by the support they received from 
their peers. Students provided overwhelmingly positive feedback about the course, describing it with words such as 
"moving," "refreshing," "uplifting," and "empowering." Students planned to incorporate skills learned from the 
course into their future medical careers.

![Table 1](image.png)
The course was well-organized.  
4.89

I would recommend this elective to other students.  
4.94

Overall, this elective was valuable for my medical education.  
4.94

**Overall Course Rating**  
4.97

**Burnout and Resilience Scales**

16 of the 18 students (89%) completed both the pre- and post-course evaluations containing items from the MBI. Data from both cohorts was aggregated and means of each subscale were compared using a paired t-test (p < 0.05). As shown in Table 2, there were statistically significant reductions in two of the three subscales of burnout (Emotional Exhaustion and Depersonalization), with alpha set at 0.05, two-tailed.

| Subscale                  | Pre-Course Mean (+SD) | Post-Course Mean (+SD) | p-value |
|---------------------------|-----------------------|-------------------------|---------|
| Emotional Exhaustion      | 29.5 (+8.54)          | 25.1 (+7.40)            | 0.045 * |
| Depersonalization         | 11.8 (+6.12)          | 9.00 (+5.40)            | 0.018 * |
| Personal Accomplishment   | 32.2 (+5.64)          | 34.0 (+6.70)            | 0.149   |

* Statistically significant decrease from pre- to post-course mean (p ≤ 0.05)

**Score Interpretation**

| Subscale                  | Score Range | Description  | p-value |
|---------------------------|-------------|--------------|---------|
| Emotional Exhaustion      | ≥ 27: High  | 17 to 26: Moderate | ≤ 16: Low |
| Depersonalization         | ≥ 13: High  | 7 to 12: Moderate | ≤ 6: Low |
| Personal Accomplishment   | ≥ 39: Low   | 32 to 38: Moderate | ≤ 31: High |

At the completion of the course, the mean score for Emotional Exhaustion (M=25.1, SD=7.40) was significantly lower than it was prior to the course (M=29.5, SD=8.54); t(15)=0.045, and the mean score for Depersonalization (M=9.0, SD=5.4) was significantly lower than it had been prior to the course (M=11.8, SD=6.12); t(15)=0.018. There was an increase in the mean score for the Personal Accomplishment subscale from pre-course (M=32.3, SD=5.64) to post-course (M=34, SD=6.7); however, it was not statistically significant; t(15)=0.149.

Of the 9 students in the second cohort, only 8 completed the pre- and post-course CD-RISC assessments. As shown in Table 3, there was an increase in mean resilience score from pre-course (M=74.25, SD=11.16) to post-course (M=80.38, D=12.52); however, it did not reach a level of statistical significance; t(7)=0.104. Scores range from 0 to 100, with higher scores indicating greater resilience.

| Subscale                  | Pre-Course Mean (+SD) | Post-Course Mean (+SD) | p-value |
|---------------------------|-----------------------|-------------------------|---------|
|                          |                       |                         |         |

**Table 2.** Mean (n=16) pre-course vs. post-course scores for each sub-scale of the Maslach Burnout Inventory. Score interpretation for each sub-scale is provided.

**Table 3.** Mean scores (n=8) from pre- and post-course administration of the Connor-Davidson Resilience Scale (CD-RISC).
Discussion

Burnout, which affects over 50% of medical students and physicians, is a long-term stress reaction that includes loss of empathy, depersonalization, decreased personal satisfaction in one’s work, and a lack of empathy for patients (Bodenheimer and Sinsky, 2014; Ishak et al., 2013; Shanafelt et al., 2012; West et al., 2006). Burnout takes a toll on mental well-being and cognitive function and is associated with increased rates of substance use and suicides amongst physicians (West et al., 2006). It is also associated with younger retirement ages and an increasingly disgruntled healthcare workforce, which hinders progress towards the ‘Triple Aim’ of lower costs, better quality, and improved access to care (Berwick, Nolan and Whittington, 2008; Bodenheimer and Sinsky, 2014). Many healthcare organizations have therefore adopted the ‘Quadruple Aim,’ adding reduction in provider burnout as a fourth goal (Bodenheimer and Sinsky, 2014; West et al., 2006). This is in response to recognition that burnout leads to medical errors, which, in turn, lead to increased costs, decreased population health, and lower quality care (Bodenheimer and Sinsky, 2014; Dyrbye and Shanafelt, 2016; Shanafelt and Habermann, 2002; Wallace, Lemaire and Ghali, 2009).

While strategies for reducing burnout have been proposed and implemented in many hospitals, fewer interventions have focused on medical students and ways to prevent burnout before it begins. Despite efforts by the accreditation councils for both undergraduate and graduate education to include communication and empathy training as core competencies, there is resistance from both students and faculty when it comes to non-traditional teaching content and methods. Many medical students view humanities-based teaching methods as ‘counter-culture’ and fail to recognize the value and rigor of narrative medicine (Arntfield et al., 2013).

Previous authors have recognized narrative medicine as an effective way to combat burnout and decrease compassion fatigue amongst medical trainees and providers (Arntfield et al., 2013; DasGupta et al., 2006; Dyrbye et al., 2011; Sands, Stanley and Charon, 2008). Doctors and trainees who reflect upon intense hospital experiences are more likely to honor and remember their patients and find greater satisfaction in their work (Childress, 2017). In turn, they are more likely to provide higher quality, compassionate care as they recognize the humanity they share with their patients (Childress, 2017; Shanafelt et al., 2002; Sklar, 2017).

Previous authors have noted that physician and trainees who reflect upon their experiences have greater emotional resilience (Childress, 2017; Montgomery, 1991). Items from the Connor-Davidson Resilience Scale (CD-RISC) were added to the electronic survey administered to the second cohort of students (2017-2018). Modest increases in resilience were observed from pre- to post-course, but the increase did not reach the level of statistical significance. This was likely due to the small sample size for this variable, as only eight students completed both pre- and post-course CD-RISC scales. Further data collection is necessary in order to demonstrate a more robust effect.

The rapid advances in technology and biomedical science threatens to draw students away from the human aspect of medicine, which was once a field that relied primarily on narrative and intuition (Childress, 2017; Montgomery, 1991). By reflecting on patient experiences, students gain empathy and humility. Through self-assessment, they are able to use real-life experiences to identify ways to improve future performance. Narrative medicine cultivates more insightful and self-aware trainees capable of understanding and expressing complex emotions and uncertainty. This ability lends to increased resilience for the future challenges they will inevitably face as physicians.
Limitations

Humanities-based educational initiatives often draw in self-selected groups of students who are better able to recognize and describe their experiences and emotions. These students likely have inherently different personality structures from their peers who opt out of such courses. It is possible that individuals who enrolled in the course have personality traits that are protective against burnout.

A previous study showed that trainees with alexithymic personality traits scored higher on MBI sub-scale of emotional exhaustion and lower on personal accomplishment (Daly and Willcock, 2002). The role of self-selection and underlying personality traits are therefore inevitable confounding variables when studying the impact of health humanities on future burnout (Daly and Willcock, 2002; Schwartz et al., 2009). Other limitations to our study included small sample size and missing data, as two students failed to complete pre-/post-course surveys containing the MBI. In addition, the CD-RISC questionnaire was only administered to the second cohort of students.

The lack of a control group in our study can be remedied in future years by electronically distributing the same questionnaires to all fourth-year medical students, including those who opted out of the health humanities course. These students could control for natural decline in stress that may occur over the course of fourth year, as finish required testing and approach graduation.

Conclusion

Medical education is currently undergoing a robust period of curricular reform, and further longitudinal studies are needed in order to assess the benefits of new initiatives (Stamy et al., 2018). Engaging with matters of life and death through novels, plays, music, poetry, and other art forms add new meaning and depth to traditional medical education, allowing students to develop a deeper appreciation of their chosen profession as both a science and art (Sklar, 2017). This is the first study to show both quantitatively and qualitatively that fourth-year medical students participating in a health humanities course experienced reduction in burnout. The positive impact of this humanities-based elective on medical trainees at a crucial juncture of their careers should prompt more widespread implementation of humanities-based electives in medical education.

Take Home Messages

- Medical trainees experienced significant decreases in emotional exhaustion and depersonalization after participating in a longitudinal narrative and reflective writing elective.
- Qualitative feedback from students was overwhelmingly positive, with reports that the course helped foster a deeper appreciation of medicine as both a science and an art.
- Further data is needed in order to demonstrate a statistically significant increase in resilience and personal accomplishment.
- Positive impact of this humanities-based elective on medical trainees should prompt more widespread promotion of health humanities as an integral part of medical education.

Notes On Contributors

Gita Anjali Narayan, MD (ORCID: 0000-0002-1540-2382) graduated in May 2018 from Zucker School of Medicine at Hofstra/Northwell, where she was part of the second cohort of fourth-year medical students in the Narrative Medicine and Reflective Writing course. She is now a first-year psychiatry resident at SUNY Stony Brook.
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**Appendices**

None.
Declarations

The author has declared that there are no conflicts of interest.

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Ethics Statement

An application for IRB Review of Educational Research was completed and exemption was granted under 45 CFR 46.101(b)(2) by the University's Institutional Review Board (IRB) governing the use of humans as research subjects. All work was carried out in accordance with the Declaration of Helsinki and there was no potential harm to participants. All students were provided and signed a School of Medicine consent form stating they understood that their responses were anonymous, and any course evaluation data would be used only in de-identified aggregate form.

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