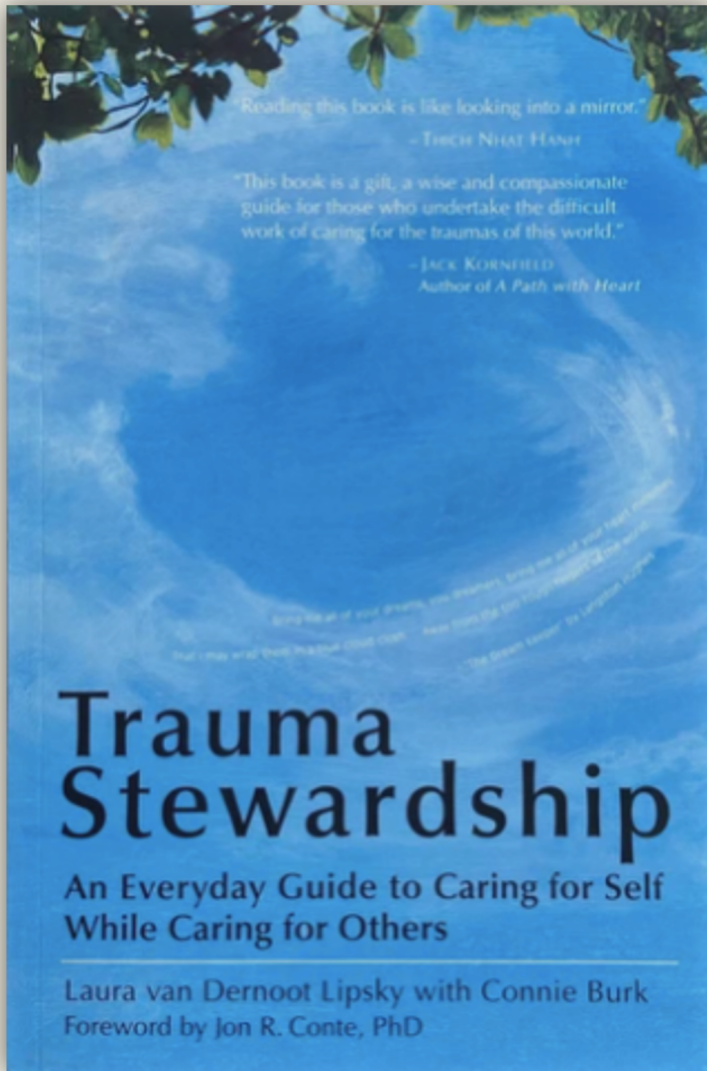


# Evidence of Secondary Traumatic Stress in Medical Students over the Course of Clinical Clerkships

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# The Dream Keeper

By Langston Hughes

Bring me all of your dreams,  
You dreamers,  
Bring me all of your  
Heart melodies  
That I may wrap them  
In a blue cloud-cloth  
Away from the too-rough fingers  
Of the world.

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# Background

- Definitions

- Burnout/Compassion Fatigue
- Major Depressive Disorder (MDD)
- Secondary Traumatic Stress (STS)

“Job related stress in any practice environment...[leading to] emotional exhaustion, depersonalization, and low personal accomplishment.”<sup>1,2</sup>

Depressive symptoms among medical students was found to be 27.7%<sup>3</sup>  
Among resident physicians 28.8% and increased with each year<sup>4</sup>

“The natural, consequent behaviors and emotions resulting from knowledge about a traumatizing event experienced by a significant other. It is the stress resulting from helping or wanting to help a traumatized or suffering person”<sup>5</sup>

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# Background

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- STS in providers<sup>6,7</sup>
  - EM physicians: 12.7%
  - Licensed social workers: 19%
  - Mental health providers treating active military: 19%
  - Trauma surgeons: 22%
  - EM nurses: 33%
- STS in medical students<sup>8,9</sup>
  - Protective factors
  - Risk factors

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# Aims

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1. To determine if STS is present among third year medical students at the University of Colorado School of Medicine
2. To assess how the prevalence may vary as students progress through their third-year clerkships
3. To investigate how the type of curriculum (LIC versus traditional) contributes to the development or progression of these symptoms

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# Methods

- Study participants
  - Third year medical students 2020-2021 (n = 190)
  - LIC students
  - Non-LIC students
- Survey administration
  - June, October, January, April
- STSS Scale<sup>6</sup>
- Data Analysis
  - Multilevel growth modeling

## STSS SCALE

*For each statement below, indicate how frequently the statement was true for you in the past seven days (never, rarely, occasionally, often, very often).*

1. I felt emotionally numb.
2. My heart started pounding when I thought about my work with patients.
3. It seemed as if I was reliving the trauma(s) experienced by my patient(s).
4. I had trouble sleeping.
5. I felt discouraged about the future.
6. Reminders of my work with patients upset me.
7. I had little interest in being around others.
8. I felt jumpy.
9. I was less active than usual.
10. I thought about my work with patients when I didn't intend to.
11. I had trouble concentrating.
12. I avoided people, places, or things that reminded me of my work with patients.
13. I had disturbing dreams about my work with patients.
14. I wanted to avoid working with some patients.
15. I was easily annoyed.
16. I expected something bad to happen.
17. I noticed gaps in my memory about patient sessions.

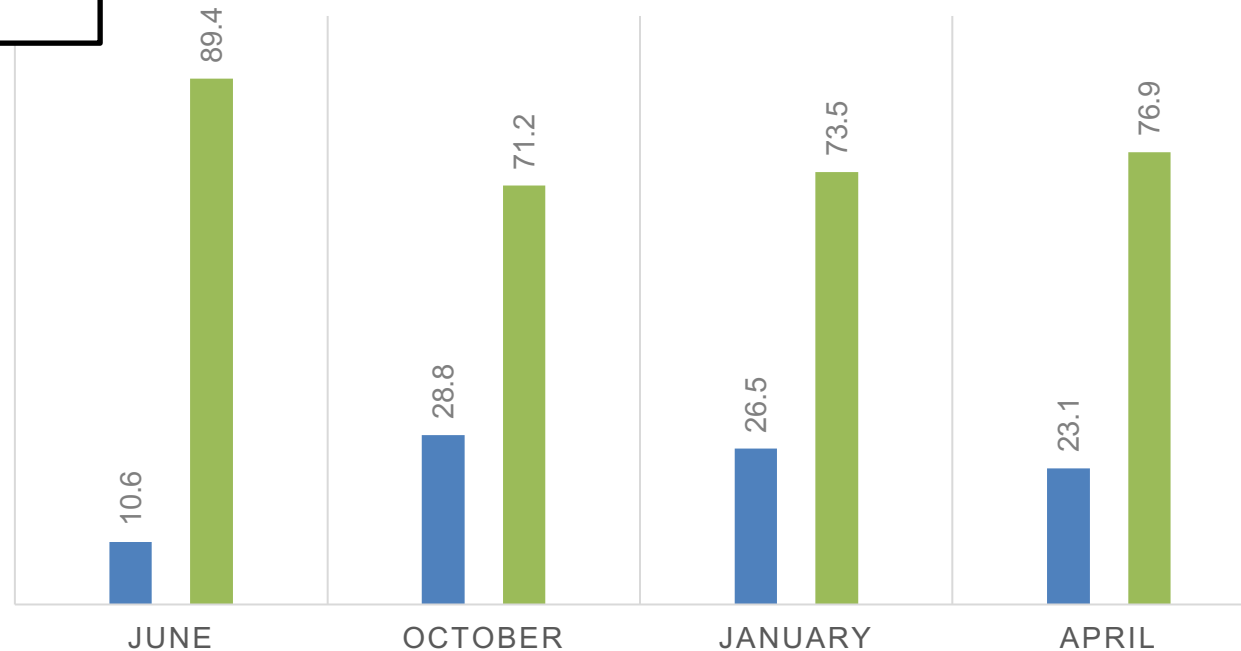
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# Results

- Mild = 28-37
- Moderate = 38-43
- High: 44-48
- Severe: 49+

## SEVERITY OF STS

■ High or severe ■ None, mild, or moderate



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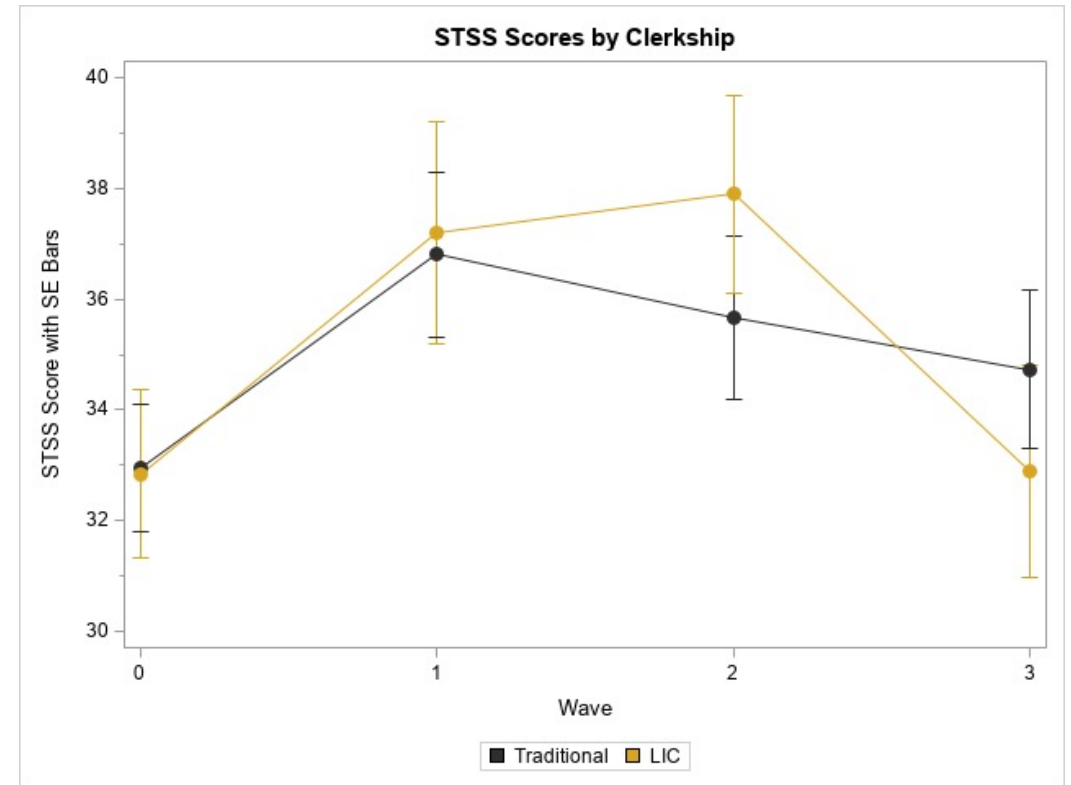
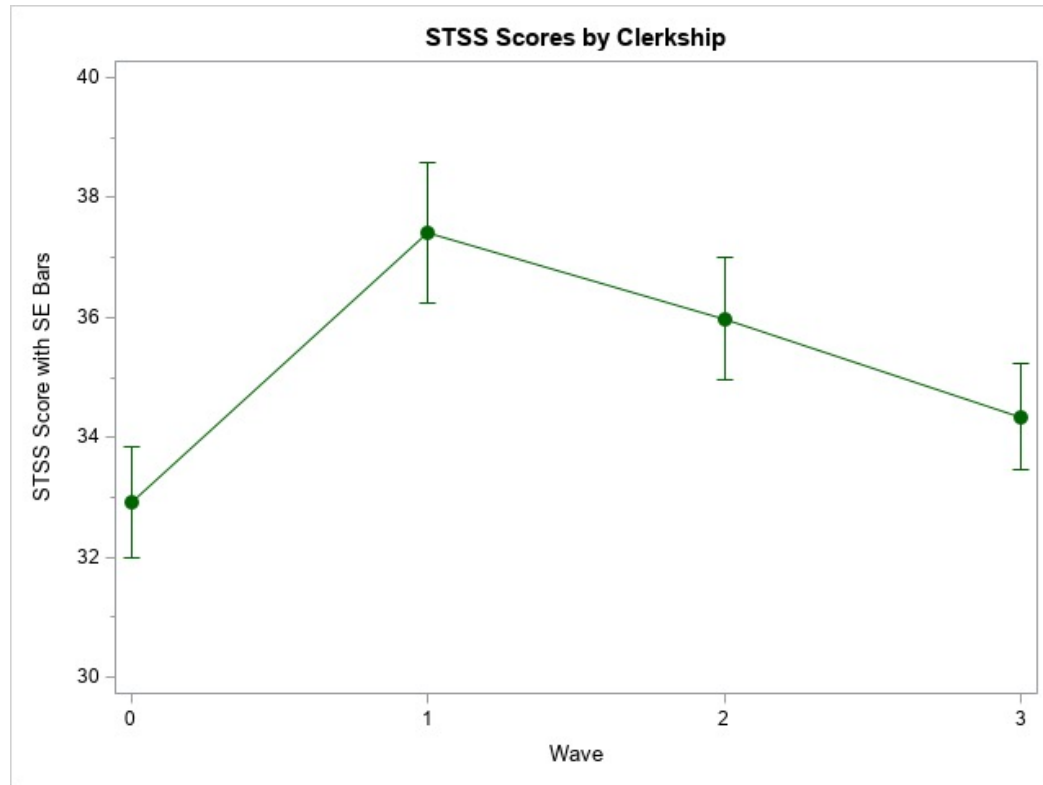


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# Results



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# Discussion & Implications

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- Overall STS rates among medical students
  - Trajectory over time
  - LIC participation
- Limitations
  - COVID-19 pandemic
- Future directions
  - STS by subcategory (intrusion, avoidance, arousal)
  - Interventions

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# References

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1. Rotenstein LS, Torre M, Ramos MA, et al. Prevalence of Burnout Among Physicians: A Systematic Review. *JAMA*. 2018;320(11):1131–1150. doi:10.1001/jama.2018.12777
2. Maslach C, Jackson SE, Leiter MP. *Maslach Burnout Inventory Manual*. 4th ed. Menlo Park, CA: Mind Garden Inc; 2016.
3. Rotenstein LS, Ramos MA, Torre M, et al. Prevalence of Depression, Depressive Symptoms, and Suicidal Ideation Among Medical Students: A Systematic Review and Meta-Analysis. *JAMA*. 2016;316(21):2214–2236. doi:10.1001/jama.2016.17324
4. Mata DA, Ramos MA, Bansal N, Khan R, Guille C, Di Angelantonio E, Sen S. Prevalence of Depression and Depressive Symptoms Among Resident Physicians: A Systematic Review and Meta-analysis. *JAMA*. 2015 Dec 8;314(22):2373-83. doi: 10.1001/jama.2015.15845. PMID: 26647259; PMCID: PMC4866499.
5. Figley CR. Compassion fatigue as secondary traumatic stress disorder: An overview. In Figley CR, ed. *Compassion fatigue: Coping with secondary traumatic stress disorder in those who treat the traumatized*. Brunner/Mazel; 1995:1-20.
6. Bride BE. Prevalence of secondary traumatic stress among social workers. *Soc Work*. 2007 Jan;52(1):63-70. doi: 10.1093/sw/52.1.63. PMID: 17388084.
7. Roden-Foreman JW, Bennett MM, Rainey EE, Garrett JS, Powers MB, Warren AM. Secondary traumatic stress in emergency medicine clinicians. *Cogn Behav Ther*. 2017 Nov;46(6):522-532. doi: 10.1080/16506073.2017.1315612. Epub 2017 Apr 28. PMID: 28452256.
8. Crumpei I, Dafinoiu I. Secondary traumatic stress in medical students. *Procedia - Social and Behavioral Sciences*. 2012;46:1465-1469.
9. Kinker B, Arfken C, Morreale M. Secondary Traumatic Stress in Medical Students. *Acad Psychiatry*. 2018 Feb;42(1):181-182. doi: 10.1007/s40596-017-0767-4. Epub 2017 Jul 13. PMID: 28707230.

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# THANK YOU!

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