

# Stressors and Coping Mechanisms of Medical Students

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## Background

- Research has documented significant levels of psychological distress and burnout in medical students. Some research has found that medical school can erode the students' natural resilience to stress.
- The goal of this project is to identify self-reported coping mechanisms, compare them with the stressors and determine how the medical students are effectively and ineffectively caring for themselves and present opportunities for the students, faculty and staff to provide timely and critical interventions.

## Methods

- A two-part survey was administered to all students during spring semesters of Academic Years 2015-2016, 2016-2017, and 2017-2018.
- Students indicated the prevalence within the last month that they felt or thought certain ways using the "Perceived Stress Scale." This instrument consisted of ten questions with a 4-point rating scale that ranged from "almost never" to "very often".
- Students also responded to the modified-COPE scale by rating the frequency with which they engaged in specific coping behaviors. The instrument included a 4-point rating-scale that ranged from "I haven't been doing this at all" to "I have been doing this a lot".
- Students Data was handled by an honest broker and was de-identified prior to being provided to investigators.
- Qualitative themes were derived from the open ended response question asking students to identify three events/experiences that had caused stress during the academic year.



## Results

- A total of 242 responses of Virginia Tech Carilion School of Medicine students were collected using the brief electronic survey.
- Data represents individuals across three academic years (2015-16 and 2016-17) in VTCSOM years M1 (55), M2 (61), M3 (62), M4 (64).
- Notable differences were identified for four items highlighted below.
- Qualitative feedback provided additional evidence of potentially interesting differences in perceived stress levels across undergraduate medical student status (M1, M2, M3, M4).

Perceived Stress	M1	M2	M3	M4
How often have you felt that you were on top of things?	1.9 (0.65)	2.0 (0.77)	2.1 (0.76)	1.7 (0.60)
How often have you been able to control irritations in your life?	2.1 (0.93)	2.1 (0.74)	2.0 (0.86)	1.7 (0.65)
How often have you felt confident about your ability to handle your personal problems?	2.7 (0.91)	2.8 (0.79)	2.7 (0.82)	2.4 (0.68)
How often have you felt that things were going your way?	3.1 (0.84)	3.0 (0.77)	3.0 (0.86)	3.1 (0.82)
How often have you felt that you were unable to control the important things in your life?	2.8 (0.74)	2.6 (0.69)	2.9 (0.86)	2.9 (0.79)
How often have you been upset because of something that happened unexpectedly?	1.9 (0.81)	1.9 (0.76)	1.9 (0.91)	1.6 (0.61)
How often have you felt nervous or "stressed"?	2.8 (0.85)	3.0 (0.70)	3.0 (0.74)	2.9 (0.89)
How often have you found that you could not cope with all the things you had to do?	2.3 (0.99)	2.4 (0.74)	2.6 (0.94)	2.8 (0.85)
How often have you been angered because of things that were outside of your control?	2.9 (0.83)	1.8 (0.77)	1.9 (0.81)	1.9 (0.82)
How often have you felt difficulties were piling up so high that you could not overcome them?	1.8 (0.86)	1.9 (0.78)	1.9 (0.92)	1.5 (0.69)

Coping Strategies	M1	M2	M3	M4
I turn to work or other activities to take my mind off things.	2.8 (0.72)	2.7 (0.80)	2.6 (0.83)	2.8 (0.85)
I concentrate my efforts on doing something about the stressful situation I am in.	2.9 (0.86)	2.9 (0.69)	2.9 (0.88)	3.1 (0.72)
I get emotional support from others.	2.6 (0.88)	3.0 (1.02)	3.0 (0.91)	3.2 (0.82)
I give up trying to deal with the stress.	1.6 (0.93)	1.5 (0.68)	1.5 (0.73)	1.5 (0.74)
I take action to try to make the situation better	3.2 (0.83)	3.2 (0.70)	3.1 (0.77)	3.2 (0.69)
I use alcohol or other drugs to help me get through the stress.	1.3 (0.67)	1.3 (0.54)	1.5 (0.63)	1.4 (0.69)
I try to see my stress in a different light, to make it seem more positive.	2.2 (0.94)	2.4 (0.99)	2.4 (0.96)	2.5 (0.90)
I am critical of myself.	3.2 (0.86)	3.2 (0.76)	3.2 (0.96)	3.1 (0.83)
I try to come up with a strategy about what to do about my stress.	2.9 (0.92)	2.9 (0.82)	2.8 (0.78)	2.8 (0.82)
I get comfort and understanding from someone.	2.9 (0.92)	3.0 (0.98)	3.0 (0.95)	3.1 (0.87)
I make jokes about the stress.	2.9 (0.98)	2.8 (0.88)	2.7 (0.89)	2.9 (0.87)
I do something to think about it less, such as going to the movies, watching TV, reading, daydreaming, sleeping or shopping.	3.1 (0.70)	3.0 (0.77)	3.2 (0.72)	3.2 (0.79)
I express my negative feelings.	2.5 (0.82)	2.5 (0.81)	2.6 (0.80)	2.5 (0.65)
I try to find comfort in my religion or spiritual beliefs.	1.7 (1.03)	1.7 (0.96)	1.7 (0.95)	1.9 (1.16)
I try to get advice or help from other people about what to do	2.2 (0.97)	2.7 (0.96)	2.6 (0.77)	2.6 (0.89)
I try to learn to live with it.	3.0 (0.80)	2.9 (0.80)	2.8 (0.74)	3.0 (0.73)
I think hard about what steps I should take next.	3.1 (0.84)	3.1 (0.83)	3.0 (0.76)	3.0 (0.85)

## Qualitative Findings

- Aggregate themes identified for the three events/experiences that have caused stress for medical students include:
  - Personal/Family
  - Research Expectations
  - Step exams
  - Residency selection/Match process
- Themes by undergraduate medical student status and representative comments:
  - M1s- Personal/Family & Block Exams**  
*"Feeling isolated"; "Scoring poorly on exam and feeling inadequate compared to peers"*
  - M2s- Personal/Family & Research**  
*"Establishing social groups, separation of family, finding my place"; "Progressing my research project"*
  - M3s- Step Exams & Rotations**  
*"Worrying about my ability to score high enough on step to be competitive for highly competitive specialties"; "Balancing studying with performance on wards"*
  - M4s- Residency Selection/Match & Personal/Family**  
*"Match day, fiscal/emotional strain of interview season"; "Maintaining work-life balance"*

## Conclusion

- For this longitudinal study, the same survey tool will again be given electronically to all medical students in the following years (2019 and 2020).
- As this is a five-year study, future analyses will investigate relationships between stress levels, coping mechanisms, and performance. We will also further investigate the trends across education status (M1, M2, M3, M4) and cohort (graduating class).
- Ultimately, these findings will be used to educate VTCSOM students on positive coping mechanisms identified for students experiencing varying extents of stress.



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