Original Research Paper

# Before the white coat: exploring the impact of prior life experiences on grit, resilience, and depression in medical students

**Amy Clithero-Eridon[1], Kristen Knepp[2], Sasha Vigil[3], Tom Markle[4], Kelsey Montoya[5], and Marlene Ballejos[6]**

[1]PhD, MBA, Principal Lecturer, University of New Mexico School of Medicine, Department of Family & Community Medicine, Albuquerque, United States
[2]PhD, Northeast Ohio Medical University, Department of Family & Community Medicine, Rootstown, United States
[3]BS, Medical Student, University of New Mexico School of Medicine, Albuquerque, New Mexico, United States
[4]PhD, Assistant Professor, University of New Mexico School of Medicine, Department of Family & Community Medicine, Albuquerque, United States
[5]MS, Medical Student, University of New Mexico School of Medicine, Albuquerque, United States
[6]PhD, MPA, Professor, University of New Mexico School of Medicine, Department of Family & Community Medicine, Albuquerque, United States

## Abstract

Medical students often face high levels of stress, emotional strain, and burnout, which can compromise both their well-being and academic performance. Although personal traits such as grit and resilience may help mitigate these challenges, there is limited research on how pre-medical school life experiences influence these protective factors. This observational study we examined the relationship between medical students' prior life experiences, including adversity, trauma, or socioeconomic challenges, and their levels of grit, emotional resilience, and depression. Medical students from all years across two geographically distinct regions were surveyed between March and August 2025. Measures included grit, resilience, depression, and detailed indicators of prior life experiences. To examine associations between types of life experiences and emotional outcomes, we used a qualitative analytical approach. There were 216 responses to our surveys, yielding a 19% response rate. Our results provide strong evidence that prior adversity and non-academic experiences can buffer against current academic stressors. These experiences help to bolster a student's resilience and ability to persevere through the significant rigors of medical education. Such prior life experiences, particularly early adversity and non-academic work, contribute to the development of grit and resilience among medical students, underscoring the need for medical schools to recognize diverse pathways and to support students' well-being alongside academic success.

**Keywords:** Life Experience, medical students, Grit, Stress, Resilience

**Date submitted:** 20-January-2025

**Email:** Amy Clithero-Eridon (aclithero@salud.unm.edu)

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Citation: Clithero-Eridon A, Knepp K, Vigil S, Markle T, Montoya K and Ballejos M. Before the white coat: exploring the impact of prior life experiences on grit, resilience, and depression in medical students. Educ Health 2026;39:196-210

**Online access:** www.educationforhealthjournal.org
DOI: 10.62694/efh.2026.603

Published by The Network: Towards Unity for Health

## INTRODUCTION

Medical students experience high levels of stress and burnout that can affect their well-being and academic performance. Prior research has focused on contributing factors such as depression, poor coping skills, and low resilience. Grit, defined as sustained persistence and passion toward long-term goals, has emerged as a protective factor, with a longitudinal study showing it helps maintain motivation and buffer against burnout.[1]

Although grit is recognized as a potential safeguard, much of the literature emphasizes intrinsic psychological traits rather than students' prior life experiences. The role of pre-medical school experiences in shaping emotional and motivational outcomes remains underexplored. Some studies suggest that early challenges, coping skills, experiential learning, and exposure to uncertainty may foster resilience and buffer academic success in medical school.[2] However, prior research has not explicitly examined how specific types of pre-medical experiences, whether traumatic, socioeconomic, or otherwise, contribute to grit, resilience, or depression.

Guided by the Life Course theory, which emphasizes the cumulative effects of life experiences on an individual's development, we hypothesize that prior experiences, including challenges and adversity, can shape key aspects of a medical student's resilience, coping

mechanisms, and overall emotional response.[3] These experiences may either bolster the student's ability to manage academic stress (acting as a buffer) or exacerbate vulnerabilities, leading to an increased risk of negative emotional outcomes such as depression and burnout. This study addresses a gap in the literature: we found no studies examining the relationship between medical students' prior life experiences and their levels of emotional resilience, grit, and depression. By correlating these factors, we aim to provide deeper insights into how life experiences contribute to or mitigate the emotional and motivational challenges that medical students face. These findings could inform targeted interventions to enhance emotional health as well as academic success, ultimately leading to more effective and personalized support systems in medical education.

## METHODS

We surveyed 414 students at the University of New Mexico School of Medicine (UNMSOM) and 700 students at Northeast Ohio Medical University College of Medicine (NEOMED) between March and August 2025. This study is based on an observational design.

### *Positionality*

The idea for this study came from the book *Grit—the power of passion and perseverance,* which found that those who explored fields prior to solidifying their specialty were happier. The author, Angela Duckworth, explored numerous fields EXCEPT medicine. Thus, we defined prior experience as exploration of a field other than medicine by obtaining an advanced degree or work/volunteer experience.

### *Data Collection*

We constructed and distributed the survey online via REDCap.[4] The survey included the yes/no, Likert Scale, and open-ended questions. We define grit as the determination to succeed, resiliency as perseverance, and prior life experience as having obtained a master's or PhD qualification, or having work or volunteer experience in a field other than medicine for more than one year before starting medical school. The two sites varied in their distribution of surveys. Together, the surveys were distributed between March and July 2025. Each site sent weekly reminders to their participants three times.

### *Indicators of interest (please see Appendix A for a complete list of survey questions)*

1. We collected demographic information to characterize our population. We asked about BA/MD status, as this pathway admits students directly from high school into an undergraduate program designed to prepare them for medical school. This cohort would not have advanced degrees or significant prior life experience, making them a unique comparison group for the other medical students.
2. We asked students to indicate which prior life struggles, commonly known as adverse childhood events, they had experienced and whether they believed they had overcome these early-life disadvantages. We also asked them to describe how these experiences may have prepared them for medical school.
3. Grit and Perseverance: We asked 11 five-point Likert-scale and open-ended questions about perseverance, how they respond to a lack of interest in a subject, how they manage setbacks, and their commitment to obtaining an MD degree. We removed the "not likely", "slightly likely", and "moderately likely" responses, as each question received fewer than 1% of the responses. The grit questions were modified from an existing grit survey.[5]
4. Prior Life Experience and Effect on Resiliency: If a respondent had prior life experience, they were given four additional questions to assess the impact on their ability to handle stress and the workload of medical school, whether it contributed to their time management skills, its influence on resilience, and whether it helped them with interprofessional and teamwork skills.
5. Effect of Prior Life Experience on Grit: If a respondent answered yes to prior life experience, we asked eight questions to gauge their perseverance, resilience, and perspectives on the challenges and rewards of medical school.
6. Depression: We created questions on mood and accessing mental health services to capture emotional status at the time of the study. For the question, "How likely are you to receive services from a particular specialty?" we combined "likely" and "extremely likely" responses.

### *Data Analysis*

We used a qualitative analytic approach to the open-ended questions. Experienced researchers M.B. and T.M. independently reviewed the questions. We coded the responses using four questions: (1) How do life events, particularly struggles, help prepare medical students for school? (2) Is there a difference between students with prior life experience and those without, in how they respond to setbacks and failures? (3) Is prior life

experience a buffer for depression during medical school? (4) What prior life experiences influence an individual's approach to teamwork or collaboration in a medical setting? As a group, we met to resolve differences and employed a consensus approach. We report frequencies for descriptive purposes. We combined the results from the two schools, as we are characterizing medical school students across all contexts and school characteristics.

***Ethics:*** The University of New Mexico Human Research and Review Committee approved this study (HRRC# 25-111). The IRB also approved the study at NEOMED (protocol #25-014). Informed consent was obtained at the beginning of the survey.

## RESULTS

We achieved a 21% response rate (N = 87) from the UNMSOM and 129 responses (18%) from NEOMED, resulting in a final sample size of 216 and an overall response rate of 19%. Table 1 presents the demographic characteristics and life challenges of the 216 medical student respondents.

One-third of respondents (N = 82, 38%) reported no pre-identified struggles or noted an additional issue in the "other" category. Specific forms of abuse mentioned under "other" included sexual abuse, domestic violence, and parental neglect. As a subset of medical care, parental mental illness, significant familial health concerns, and individual chronic conditions were specified under the "other" struggle category. The journey to medical school was influenced by a lack of

**Table 1: CACMS elements classified by theme and subtheme**

| **Total** | **216** | **100%** |
|---|---|---|
| **Medical Student Master's Degrees Demographics** | | |
| | | |
| | **N** | **%** |
| Yes | 44 | 20% |
| No | 172 | 80% |
| **Total** | **216** | **100%** |
| **Medical Student PhD Demographics** | | |
| | | |
| | **N** | **%** |
| Yes | 3 | 1% |
| No | 213 | 99% |
| **Total** | **35** | **100** |
| **Medical Student Background Struggle Demographics** | | |
| | **MS1** | |
| | **N** | **%** |
| Food insecurity | 20 | 9% |
| Economic hardship | 62 | 29% |
| Lack of mentors | 81 | 38% |
| Poor quality education | 31 | 14% |
| Lack of medical care | 24 | 11% |
| Death of a family member or close friend | 47 | 22% |
| High crime | 9 | 4% |
| Parental abuse | 28 | 13% |
| Parental addiction | 23 | 11% |
| Other | 28 | 13% |
| None | 82 | 38% |

| **MS YEAR** | **N** | **%** |
|---|---|---|
| MS1 | 54 | 25% |
| MS2 | 57 | 26% |
| MS3 | 65 | 30% |
| MS4 | 40 | 19% |
| **Total** | **216** | **100%** |
| | | |
| **Medical Student Racial Demographics** | | |
| American Indian or Alaska Native | 9 | 4% |
| Asian | 42 | 19% |
| Black | 6 | 3% |
| Hispanic or Latino | 33 | 15% |
| Native Hawaiian or Other Pacific Islander | 0 | 0% |
| White | 105 | 49% |
| Other _____ | 14 | 6% |
| Prefer not to answer | 7 | 3% |
| **Total** | **216** | **100%** |
| **Medical Student Gender Demographics** | | |
| | | |
| | **N** | **%** |
| Female | 131 | 61% |
| Male | 79 | 37% |
| Non-Binary | 3 | 1% |
| Prefer not to answer | 3 | 1% |
| **Total** | **216** | **100%** |
| **Medical Student BA/MD Demographics** | | |
| | | |
| | **N** | **%** |
| Yes | 44 | 20% |
| No | 172 | 80% |

mentors (N = 83, 38%) and the poor quality of their previous education (N = 31, 14%). Other external factors identified as a struggle included the death of a family member or close friend while growing up (N = 47, 22%) and immigration experiences, such as encountering racism and language barriers. More than three-quarters of the students (N = 116, 85%) believe they have overcome the disadvantages they faced during their childhood. Students who experienced one or more struggles self-identified how these experiences prepared them for academic or medical school. In order of significance, the themes that arose included:

***Resilience/Self-Reliance:*** "*These struggles have really impacted me on a resiliency framework. The death of my mother in high school, following her cancer battle through my early adolescence, gave me a lot of independence and growth and kind of a "do what you need to do" mindset that has been very beneficial in the struggles of medical school. The parental addiction also gave me valuable insight into addiction and its effects on families, as well as the individual dealing with the addiction. I also grew up in an area with poor quality education, but that gave me great skills in seeking knowledge and skills to teach myself what I wanted to learn, which has been super beneficial in the medical school curriculum."*

***Empathy/Compassion:*** *"I am very familiar with low access to healthcare and the various reasons behind not following medical advice. I think that it has made me more empathetic to the stories that my patients tell me"* (MS4).

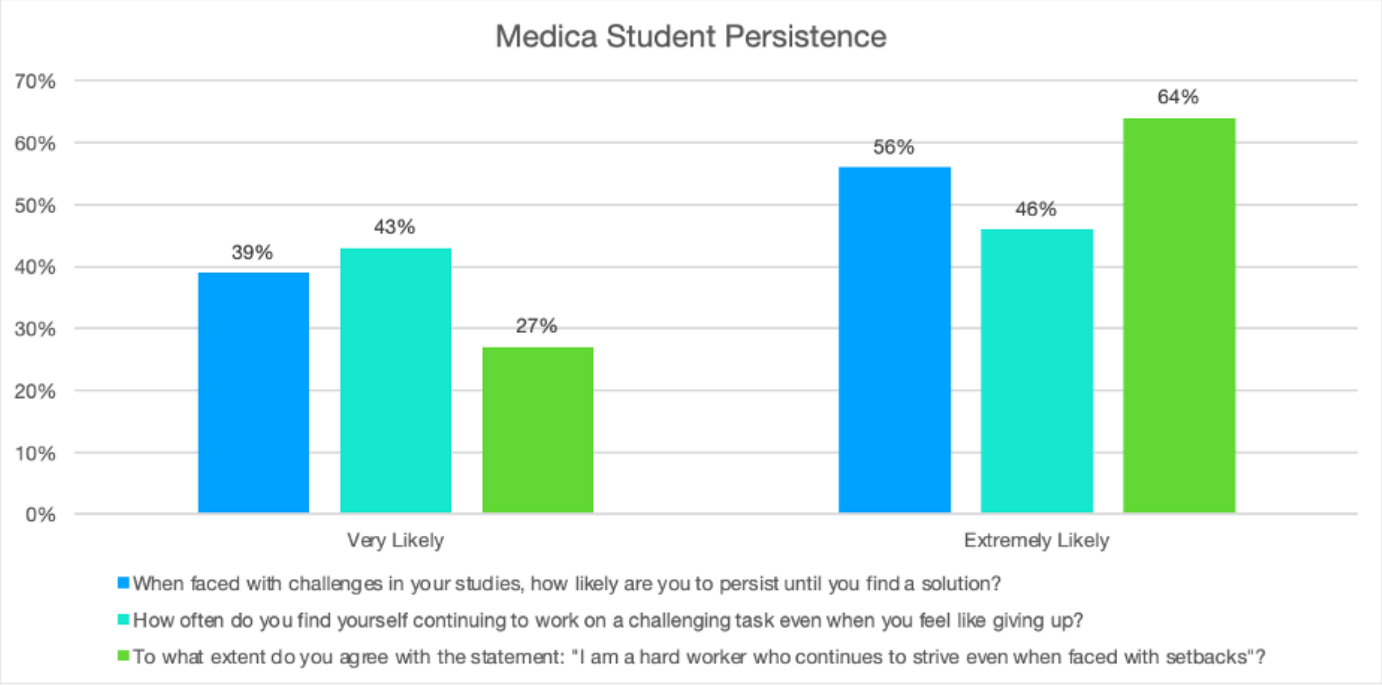
***Value of Networking/Mentor/Support:*** Themes included **resourcefulness**. *They have helped me become*

*more resourceful and appreciative of the help available or offered. These struggles partly inspired me to go to medical school so that I may be able to offer help to those in my community who also experience the same."* (MS3) ***Gratitude:*** *"It made me resourceful and to practice gratitude with all that I have/am given."* (MS2) and ***Escape:*** *"These struggles have motivated me to do well in school because I know it is my only way out of poverty."* (MS1)

***Grit and Perseverance***

Not surprisingly, the majority of students were extremely determined to succeed in their medical studies (N = 192, 88%). However, among 214 respondents, 109 (51%) reported sometimes, often, or almost always losing interest in their studies. In contrast, the ability to maintain focus and passion for their studies was prevalent (above average or excellent) in 62% of respondents (N = 135). The degree of student persistence is shown in Figure 1, "Medical Student Persistence." More than one-half of the students believe they are hard workers who thrive when faced with setbacks, yet agreement with the first two statements about persistence is lower. Students had strategies for responding to setbacks and failures in their academic performance, primarily by giving themselves grace and acknowledging their feelings. For example, *"[I] take a few hours or days to acknowledge and accept the emotions that come with failure. (*MS4). The second predominant theme was introspection and reflection on the events that had occurred. One MS3 stated, *"Usually, I take a minute to reflect on things and connect myself with resources/support to develop a plan. I make the plan and maintain a positive attitude to stay motivated. I use the failure as fuel to keep going and perform even better on that next assignment."* After assessing the situation, several students stated they ask for help from others, such as the MS3, who said, *"I reassess and evaluate how I've approached something. I think about what I may need to change or add to my study regimen. I seek help, whether it is from a mentor, a professor, a resource available at school, or an academic resource online."*

**Figure 1: Medical Student Persistence**




Both internal and external motivators drive them to work hard, even in the face of study difficulties. External motivation themes centered on accruing debt if they fail and not letting others down, *"I really try not to focus on myself in times like that. I consider my future patients, my family who worked hard to support me to get me here, and my friends who have poured into me and made me into who I am. Ultimately, if I'm working for others, I find the motivation stays strong"* (MS2). Internal motivators were the primary drivers, including a passion for medicine, a love of learning, and a desire to heal others. As one MS1 noted, *"My future career motivates me to work hard, knowing that this is one of the most selfless professions and the fact that I am able to pursue this career is rare and incredible."*

Struggles also affected students' lives outside academia. We asked how students handle non-academic issues, which were self-identified as personal issues of: mental health struggles, isolation and loneliness, financial hardships, relationship issues, and health problems. Although the struggles were outside the education system, schools are valuable resources. Resources included learning specialists, peer-to-peer mentors, and faculty guidance. The ability to request test-taking accommodations was also noted. However, some students simply push through. *"Just pushing through. I often feel like I'm white-knuckling it. Sometimes it feels like I'm in a hurricane alone, just holding on until things level out. As long as I don't drown, I'll come out on the other side"* (MS4).

In addition to perseverance and resilience, another aspect of grit is setting goals, demonstrating commitment, and ultimately, achieving success. Almost three-quarters of the students (N = 158, 72%) reported setting specific academic goals for themselves in medical school, and 94% (N = 204) were very or extremely committed to achieving their long-term goals in medicine. Regarding achievement, 80% (N = 174) of the respondents are satisfied or very satisfied with the effort they have put into their studies compared to the results they have achieved so far.

**PRIOR LIFE EXPERIENCE**

Almost three-quarters of the students (N = 149, 70%) had significant paid or volunteer work experience before starting medical school. Prior life experience included more than 1 year of significant work in a profession other than medicine. Slightly more than one-half (N = 91, 61%) of the respondents provided a description of their experiences, as captured in Table 2: Prior Life Experience.

Approximately one-half (N = 107, 50%) reported that prior life experience was very or extremely influential in managing stress and workload during medical school. The majority (N = 127, 87%) attributed their ability to manage time and prioritize responsibilities to prior work experiences. Life experience also positively affected perseverance and was influential in developing work ethics: *"I believe having a job and responsibilities like bills have made me more resilient in the face of academic challenges because I have gotten myself through a lot of challenging times in life and will continue to do that in medical school" (MS1).*

Students reported gaining insight into their values, purpose, and identity beyond academics. Some students described previous jobs or life experiences as more challenging than medical school, providing perspective

**Table 2: Prior Life Experience**

| Theme | Description | Frequency |
|---|---|---|
| **Healthcare (non-MD roles)** | Roles such as EMT, medical scribe, ER tech, phlebotomist, medical assistant, and other direct patient care support roles. | 22 |
| **Research** | Clinical and bench research, often conducted in labs or academic settings, typically involves PhDs and postdoctoral work. | 18 |
| **Service Industry** | Work in food service, bartending, customer support, retail, and other public-facing roles that develop interpersonal and multitasking skills. | 14 |
| **Education & Tutoring** | Experience as professors, teaching assistants, tutors, or academic mentors. | 12 |
| **Public Health/Nonprofit** | Roles in epidemiology, health departments, and nonprofit organizations related to health equity and community engagement. | 10 |
| **Administrative/Technical** | Work in admissions, programming, data entry, and administrative support roles. | 9 |
| **Creative/Unique Backgrounds** | Artistic work, missionary service, freelance gigs, farming, or other non-traditional paths that provide a broader perspective and skills. | 6 |

and motivation for their medical studies. One hundred % stated that their prior experiences outside of academia helped them develop valuable interpersonal skills. *"I think having customer service skills is fundamental to success in medicine. It teaches you to deal with difficult situations when you don't agree with someone and also helps you figure out how to work on a team."* (MS1)

Previous experiences influenced students' perspectives on the challenges and rewards of a medical career. The themes are presented in descending order from those that arose most frequently in the following Table 3: Effect of Previous Experiences on Student Perspectives.

**IMPACT OF WORK/LIFE EXPERIENCE ON GRIT**

Prior work and life experience affected our population's grit. Slightly more than half of students (N = 78, 53%) believed prior work and life experiences significantly contributed to their ability to persevere through challenges in medical school. A total of 81 (56%) thought it helped them develop resilience or adaptability that is beneficial to their medical studies. Specific skills or lessons learned from prior experiences include:

It influenced their approach to teamwork and collaboration in a medical setting by improving teamwork, leadership style, communication, and interpersonal skills. As an MS2 noted, *"I've had a lot of jobs where teamwork is super important, and I know that one of the best qualities we can have as doctors is to be*

**Table 3: Effect of Previous Experiences on Student Perspectives**

| Theme | Description | Quote |
|---|---|---|
| Realism & Informed Perspective | Students with previous work/life experience approach medicine with maturity, pragmatism, and less idealism. | MS3 – *"I more realistic than I would have been if I was younger."* |
| Resilience & Growth through Adversity | Experiences of failure, hardship, or uncertainty strengthened emotional resilience and fostered confidence. | MS4 – *"Understanding the system better, understanding the importance of communication, understanding I cannot change the world and being OK with that, valuing team work, being happy with small gains, being ok with setbacks and setting a new course. much more. In general, a more positive perspective and confirmation that this is what I want to do, despite the challenges."* |
| Greater Appreciation of Rewards | Prior obstacles make success in medical school and the impact on patients feel more meaningful and satisfying. | MS2 – *"Everyone told me that eventually, I would lose the excitement of getting into medical school and become burned out. We're almost done with didactics, and it honestly never went away. I think for younger students and students out of undergrad it´s easier to think of the grass as greener when you see your friends starting to make money, or travel, or just have more freedom, being out in the working world for a while and coming back gave me a lot of perspective. I also have the advantage of having chosen this in my adult life. I didn't have any parental or institutional pressure, so it was a decision I took very seriously and didn't rush."* |

| | | |
|---|---|---|
| Insight into Health Systems & Inequities | Professional and personal exposure to a healthcare-informed understanding of systemic barriers and patient care challenges. | MS1 – *"There were times when I became aware of personal issues among my residents, but they weren't within my scope as an RA of what I could fix. I can foresee this happening in my medical career as well. On the other hand, I love seeing those around me succeed, and I feel that I experienced that as an RA and here* |
| Intrinsic Motivation & Informed Choice | Many students emphasized that their decision to pursue a career in medicine was intentional, well-considered, and internally driven. | MS3 – *"Working in free clinics and in the emergency department has provided great insight into the good that we are able to do as medical providers. This has been a great reminder and motivation during the pre-clinical years of medical school in which you are often not seeing patients."* |
| Empathy & Patient-Centered Perspective | Firsthand experiences (e.g., as patients, scribes, or in service roles) shaped how students plan to treat patients. | *"I learned to be patient and that good things take hard work and commitment."* |
| Commitment to Mentorship & Representation | Some expressed a desire to mentor those from similar backgrounds or underrepresented communities. | MS3 – *"I think I will find it rewarding to mentor younger people who are interested in medicine who potentially come from a background similar to my own: diverse, poor public education."* |
| Clarity on Career Fit | Specific experiences helped students confirm what they do, or do not want in their future careers. | MS3 – *"Scribing was perhaps the most enlightening experiences in my work history. While I don't think it would be ideal for anyone, I had the opportunity to work in the clinical and ED setting at the peak of COVID. During this time, I witnessed, the lowest lows and the highest highs medicine had to offer. This experience challenged my thoughts on what I wanted to bring to healthcare on a personal level as well as society at large. To be honest, the inhumanity of those financially benefitting from the loss of human life and exploiting healthcare workers at their brink almost broke me—but not completely. Working in research was healing from this experience. In my position, I presented grants to donors fundings our projects, many of whom were affected by or lost loved ones to the disease we studied. Their belief in doing better for those that would be affected in the future and the will to fight healed the parts of me broken by COVID."* |

*easy to work with. I think it's a huge advantage to have made professional missteps and mistakes before starting school."* There was another observation that was not as positive, but relevant when working in teams, that was made by an MS1, *"Honestly, my experiences have made me recognize the need to be a good team player in the way that I contribute to a group and allow others to do their part."*

Communication skills were also learned before medical school, such as *"Help(ing) with maintaining professionalism and navigating conversations with*

*authority figures"* (MS3). Interpersonal skills were noted to be the most significant skill learned, "*I would say interpersonal skills were the biggest benefit. Not only having to learn the information for myself and to pass classes, but also how to communicate with patients/peers in class has been helpful*" (MS1). Prior experience was recognized by 98% of the respondents (N = 139) as having led to personal growth or development. These previous experiences have shaped perspectives on the challenges and rewards of a medical career and are organized into three themes, as shown in Table 4: Challenges and Rewards of a Medical Career.

**Table 4: Challenges and Rewards of a Medical Career**

| | |
|---|---|
| ***Healing as a Reward*** | *My past experiences helped me see that while a medical career is full of challenges, it's also deeply meaningful - especially when I think about who I want to become and the impact I want to make." (MS2)* |
| ***Wider Perspective*** | "*I think that the biggest challenge in a medical career is the temptation to surrender oneself entirely to said career. Having a broader perspective from prior experience, I feel, can make one better at resisting this draw." (MS2)* |
| ***Duality of Medicine:*** | *"I have seen both the beauty of medicine as a field where meaningful change happens, while also being a field that can feel futile. Further, I came to realize that if we don't look at the big picture often, we will get stuck in the weeds and miss the point of all of this." (MS1)*, Conversely, another respondent noted, *"It's made me a little disillusioned with medicine. I don't think that doctors are superheroes, and I don't think that doctors are as glamorous as people make them out to be. I'm just here to do my best." (MS3)* |

Drawing on students with prior work/life experience, we asked them for advice to prospective medical students on the importance of such experiences in developing grit and resilience. Several students noted the importance of taking a gap year. "*The gap years I took helped me better understand myself, my career goals, and what I want out of life. Taking that time out of school was the best thing I have done in my professional journey because it helped me grow so much. For students who don't, I think they are in a more difficult position, as they have to ensure they take more time throughout medical school to learn more about themselves and grow as a person. Finally, I believe that my classmates who took time off before starting medical school have more perspectives to approach situations from than those who did not take time off. This is really important to me as it helps me better understand my peers, patients, and teachers."* An MS2 stated, "*I would recommend that all medical students take a gap year. I think there's a huge disadvantage to becoming a doctor at 25 and having that role as your first work experience. I don't know if the older people in my class do academically better than the younger students, but anecdotally, I think we're a lot happier and healthier. I don't think you really learn how to be an adult in college, because so much of your life is decided for you—having to make decisions for yourself is really important."*

Another piece of advice that emerged from this question was the importance of developing coping skills. *"The more experiences you have, the more prepared you will be to tackle a career in medicine. At some point, you are going to struggle. It is far better to struggle before medical school so you learn to navigate failure in a setting with less impact on your career. Find ways to learn resilience before you start." (MS3)* and learn to reflect, "*Reflect on your prior experiences to learn from them, not to ruminate on mistakes". (MS4).*

In recognition of the importance of a variety of coping skills and internal resilience, we asked how medical schools can better support students with diverse backgrounds and experiences to enhance their success and overall well-being. In addition to academic support, wellness resources, financial aid, mentoring, and research support through networks, intangibles were also noted. See **Table 5: Medical Student Recommendations for Improving Medical Education by Theme and Year in School**

**Table 5: Medical Student Recommendations for Improving Medical Education by Theme and Year in School**

| Theme | Recommendation (quote) | Medical Student Year |
|---|---|---|
| Be OK with failure | *It was good that I wasn't accepted for two years because it taught me a lot of resilience, grit, and maturity. It also taught me to be humble. Medical schools need to normalize failure and how to overcome it. They also need to reject/fail students who aren't ready so they can grow. That's where character is built.* | MS3 |
| Be Understanding | *Learn when students need social support to support their academic development. It all boils down to our hierarchy of needs. If our basic needs are not adequately addressed, causing additional stress to an already challenging academic workload, it undermines the potential we can all possess.* | MS3 |
| Have Flexibility | *I think flexibility is very helpful. As a father and husband, I occasionally need time for those responsibilities. In addition, having multiple avenues of academic support available is very helpful, as different students will find different resources helpful.* | MS1 |
| Have Humanity | *I think that reminders of the humanity integral to each person are huge. We are HUMAN medical students who have HUMAN needs of eating well, sleeping well, hydration, social connection, exercise, etc. We cannot expect to perform at this level of difficulty unless we first take care of those tasks. Racing to the bottom of how much you are willing to sacrifice in those other areas to "be successful" in medical school is not a battle anyone really wants to win. It might be wise to remind students to assess their feelings about the rest of their life and how they prioritize managing it. I think this is critical to my success so far, and I will do my best to preserve this as I continue throughout my education.* | MS1 |
| Encourage active engagement | *"Diverse backgrounds" is a loaded phrase and encompasses too many areas of need. Medicine needs to focus on its racial, ethnic, and social competence. I cannot, however, speak to all of these things. As an older, first-generation medical student with a "colorful" background and story, I just want classes to stop treating my life as "scenarios" in our social competency classes. Many panels regarding poverty, disability, sexuality, etc., feel like we are "practicing" doing human things or gawking at people going through adversity. Medical school has made me feel more disconnected from who I am and where I come from than any other experience in my life. These experiences can be taught differently through service-based learning and in more intimate settings to provide real engagement (i.e., volunteering at LGBTQ+ centers, working on projects with disability advocates, health fairs in underserved communities, etc.).* | MS3 |

**DEPRESSION ASSESSMENT**

Based on the PQ2, 40% (N = 86) of medical students reported little interest in engaging in activities on some days. Fewer than 8% (N = 17) reported feeling this way daily, whereas 52% (N = 113) reported not feeling this way in the last two weeks. Similar responses were found when participants were asked in the previous two weeks how often they had felt down, depressed, or hopeless.

Sixty percent (N = 127) stated not at all, while 15 (7%) reported feeling this way every day. Students needed mental health services during medical school at almost equal rates to those who did not need services, with 49% needing them and 51% stating no services were required. The location where students received wellness support is detailed in **Table 6: Mental Health Services for Medical Students.**

**Table 6: Medical Student Use and Likelihood of Using Mental Health Services**

| **Yes—Received Services** | | |
|---|---|---|
| | | **Likelihood of Using Services if Needed** |
| | **N (%)** | **N (%)** |
| Student Health Services | 76 (72%) | 54 (25%) |
| Psychologist | 63 (60%) | 29 (13%) |
| Psychiatrist | 56 (53%) | 29 (13%) |
| Outside the school system | 52 (49%) | 41 (19%) |
| Primary care provider | 28 (54%) | 54 (25%) |

## DISCUSSION

This study investigated the relationship between prior life experiences and medical students' emotional well-being, focusing on grit, resilience, and depression. Consistent with life-course theory, cumulative experiences appear to shape students' ability to navigate the stresses of medical training.[3] Our results suggest that prior adversity and non-academic experiences can buffer academic stressors, strengthening resilience and perseverance. Due to the small number of BA/MD students, conclusions for this subgroup are limited.

Although many students reported at least one significant pre-matriculation challenge, most reported overcoming these experiences. Themes from free-text reflections, including resilience, empathy, and self-reliance, support our hypothesis that early life challenges foster effective coping mechanisms. Our findings align with existing research identifying grit as protective against burnout and extend the literature by highlighting the protective role of lived experiences in academia.[1,6] Most students (80%) reported satisfaction with their educational efforts relative to outcomes, and 62% reported sustained persistence and passion for medicine despite intermittent loss of interest (51%). These findings are consistent with evidence that maintaining interest mitigates depression.[6,7]

In our study, prior work and life experiences were associated with self-reported grit and resilience. Most respondents (70%) had significant work experience prior to medical school, and half reported that these experiences were very, or extremely influential in managing medical school stress and workload. Notably, 87% attributed prior experiences to time management skills. One student reflected, *"The more experiences you have, the more prepared you will be to tackle a career in medicine...It is far better to struggle prior to medical school so you learn how to navigate failure."*

More strikingly, 100% of respondents attributed prior experiences with developing interpersonal and communication skills crucial to clinical success.[8] As one student noted, *"The most important thing we do as medical professionals is team building and relationship building."* These findings suggest that admissions processes focused narrowly on academic metrics may overlook essential skills cultivated through real-world experiences. Students' advice to prospective applicants to take a gap year and intentionally build coping strategies and maturity further underscores the value of these experiences.

Our findings underscore the complex relationship between prior experiences and perseverance (grit). While prior experiences often buffered stress, they did not protect students from the psychological demands of medical school. Forty percent of respondents reported periods of low interest or pleasure, and nearly half (49%) had utilized mental health services, consistent with known rates of depression among medical students.[9–12] These findings suggest that prior experiences may foster resilience but do not replace the need for strong institutional support.

Respondents provided clear recommendations for how medical schools can better support students. Key themes

included normalizing failure; addressing students' basic needs; offering flexibility for non-traditional learners and those with family responsibilities; and promoting service-based learning with marginalized populations. Nearly one-third of respondents reported prior economic hardship, and 9% reported food insecurity, underscoring the importance of meeting students' fundamental needs.[13,14] Additionally, approximately one-fifth held a prior graduate degree, and several emphasized the value of gap years, highlighting the diversity of medical student backgrounds. Consistent with prior research, we recommend that medical schools remain responsive to the unique challenges faced by nontraditional learners.[15]

Our findings align with a recent study demonstrating that adverse childhood experiences were associated with higher psychological distress among graduate-level health sciences students, yet were unrelated to current resilience, suggesting effective coping skills are developed by the time of professional training.[16] Our results extend this work by indicating that prior work and life experiences may help explain this resilience.

**Limitations and Future Directions**

This study has several limitations. The low response rate (19%), the predominance of female respondents (61%), and the inclusion of students from only two U.S. medical schools may limit generalizability. The retrospective, self-reported design precludes causal inference, and respondents' emotional state at the time of survey completion may have influenced recall. Finally, combining measures of grit, resilience, perseverance, and depression may have obscured the influence of the school environment.

Future research should include larger, more diverse, and longitudinal samples to examine changes in well-being across medical training. We also recommend reporting school-level characteristics (e.g., size, location, and support services) and further examining specific forms of prior adversity to better identify experiences that most strongly contribute to resilience.

**CONCLUSION**

Our findings suggest that early-life adversity and non-academic work meaningfully contribute to the development of grit and resilience in medical students. Students perceive these experiences as sources of strength and insight that support coping with medical training and foster effective relationships with faculty, peers, and patients. Overall, prior life experiences play an important role in cultivating a resilient and compassionate physician workforce.

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## Appendix 6: SURVEY

**DEMOGRAPHICS**

1. Race
    - American Indian or Alaska Native
    - Asian
    - Black
    - Hispanic or Latino
    - Native Hawaiian or Other Pacific Islander
    - White
    - Other _____
    - Prefer not to answer
    - If other, please describe

2. Gender
    - Female
    - Male
    - Non-Binary
    - Prefer not to answer
3. Were you a BA/MD Student? Y/N
4. What is your current MS Year
    - MS1
    - MS2
    - MS3
    - MS4
5. Did you obtain a Master's degree prior to starting medical school? Y/N
6. Did you receive a PhD prior to starting medical school? Y/N
7. What major struggles did you face growing up? (You can select more than one)
    - Food insecurity
    - Economic hardship
    - Lack of mentors
    - Poor quality education
    - Lack of medical care
    - Death of a family member or a close friend
    - High crime
    - Parental abuse
    - Parental addiction
    - Other
    - None
    - If you faced a struggle not listed, please describe
8. Are there ways in which these struggles have helped you prepare for academic or medical school? Please describe
9. Do you believe you have overcome the disadvantages you had growing up? Yes/No

**GRIT ASSESSMENT**

Please rate the following questions based on the scale provided.
1 = Not at all 2 = Somewhat 3 = Neutral 4 = Probably 5 = Extremely

1. How determined are you to succeed in your medical studies?

**PERSEVERANCE**

Please rate the following questions based on the scale provided.
1 = Not likely 2 = Slightly Likely 3 = Moderately 4 = Very Likely 5 = Extremely likely

1. When faced with challenges in your studies, how likely are you to persist until you find a solution?
2. How often do you find yourself continuing to work on a challenging task even when you feel like giving up?

Please rate the following questions based on the scale provided.
1 = Never 2 = Seldom 3 = Sometimes 4 = Often 5 = Almost Always

3. To what extent do you agree with the statement: "I am a hard worker who continues to strive even when faced with setbacks"?
4. Do you often find yourself losing interest in your studies? Y/N

Please rate the following questions based on the scale provided.
1 = Very Poor 2 = Below Average 3 = Average 4 = Above Average 5 = Excellent

5. How would you rate your ability to maintain focus and passion for your medical studies over time?
6. Do you often become interested in an academic subject only to lose interest soon after? Y/N
7. Do you often become interested in a non-academic subject, only to lose interest soon after? Y/N
8. How do you typically respond to setbacks or failures in your academic performance? (open-ended)

9. Have you faced any significant obstacles during your medical education? Y/N
    a. If yes, how did you overcome them?

Please rate the following questions based on the scale provided.
1 = Never 2 = Seldom 3 = Sometimes 4 = Often 5 = Almost always

10. How frequently do you set specific academic goals for yourself in medical school?

Please rate the following questions based on the scale provided.
1 = Not at all 2 = Slightly 3 = Moderately 4 = Very 5 = Extremely

11. How committed are you to achieving your long-term career goals in medicine?
12. What motivates you to keep working hard even when faced with difficulties in your studies? (open-ended)

Please rate the following questions based on the scale provided.
1 = Very Dissatisfied 2 = Dissatisfied 3 = Neither 4 = Satisfied 5 = Very Satisfied

13. How satisfied are you with the effort you put into your studies compared to the results you achieve?

**PRIOR LIFE EXPERIENCE**

1. Did you have any significant work experience before starting medical school? Y/N
    a. If yes, please describe

Please rate the following questions based on the scale provided.
1- not at all influential 2 - slightly influential 3 - somewhat influential 4 - very influential
5 - extremely influential

2. How would you rate the impact of your prior work experience on your ability to handle stress and workload in medical school?
3. Did your prior work/life experiences contribute positively to your ability to manage time effectively as a medical student? Y/N
4. In what ways do you think your previous experiences have influenced your resilience in the face of academic challenges? Have your prior experiences outside of academia helped you develop useful interpersonal skills in your medical education? Y/N

**IMPACT OF WORK/LIFE EXPERIENCE ON GRIT**

Please rate the following questions based on the scale provided.
1 - No effect 2 - Minor effect 3 - Neutral 4 - Moderate affect 5 - Major affect

1. To what extent do you believe your prior work/life experiences have contributed to your ability to persevere through challenges in medical school?
2. Have your previous experiences outside of academia helped you develop resilience or adaptability that is beneficial in your medical studies? Y/N
3. In what specific ways have the skills or lessons learned from your prior experiences been applicable to your current studies in medicine? (open-ended)
4. How has your past work/life experience influenced your approach to teamwork or collaboration in a medical setting? (open-ended)
5. Have you noticed any personal growth or development in yourself due to your prior work/life experiences? Y/N
6. How have your previous experiences shaped your perspectives on the challenges and rewards of a medical career? (open-ended)
7. What advice would you give to incoming medical students regarding the importance of prior work/life experiences in developing grit and resilience? (open - ended)
8. How can medical schools better support students with diverse backgrounds and experiences to enhance their success and well-being? (open-ednd)

**DEPRESSION ASSESSMENT**

Please rate the following questions using the provided scale.
0 = Not at all 1 = Some days 2 = Nearly every day

- Over the last 2 weeks, how often have you had little interest or pleasure in doing things?
- Over the last 2 weeks, how often have you felt down, depressed, or hopeless?
- Have you ever needed mental health services during medical school? Y/N
- Did you receive services from student health services? Y/N
- Did you receive services from your PCP? Y/N
- Did you receive services from a psychiatrist? Y/N
- Did you receive services from a psychologist? Y/N
- Did you receive services outside of your school system? Y/N

Please rate the following questions using the provided scale.
1 = Extremely unlikely 2 = Unlikely 3 = Neutral 4 = Likely 5 = Extremely likely

- If you needed mental health services, how likely are you to receive services from:
    a. Student health services
    b. A primary care provider
    c. Psychiatrist
    d. Psychologist
    e. Outside of your school system