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The social experience of stress as premedical students in the United States

Caitlin Tickman, Lauren D. Olsen *

Department of Sociology, College of Liberal Arts, Temple University, 722 Gladfelter Hall, 1115 Polett Walk, Philadelphia, PA, 19122, United States

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ABSTRACT

Premedical students (premeds) are stressed. While the literature describes some of the reasons why premeds are stressed and the impact of stress on students' desire or ability to continue along the premed pathway, there is less of an understanding about how premeds understand, interpret, and metabolize stress. We draw upon in-depth interviews with twenty-seven first-year premeds from a large, public, metropolitan university in the United States to gain insight into their experiences and expectations. Our sample is split between insiders—that is, students who have at least one parent with a college degree—and newcomers—or, students who are first-generation college students. First, we show that first-year premeds arrive to college with different experiences with stress, depending on their insider or newcomer status. Insiders have social and cultural capital that has primed them to be at ease with stress, whereas newcomers arrive to college with less comfort with the competitive environment and valorization of stress. Then, we describe students' perceived lack of formal guidance from the premed advising office and how it opens up space for peer socialization around stress. We conclude by showing how insiders are less flustered by the stress while newcomers are more likely to begin to doubt themselves and their ability to become physicians. Bridging the peer socialization and social reproduction of inequalities literatures, we argue that it is possible that social understandings of stress are a key mechanism to the reproduction of inequalities within the medical profession.

1. Introduction

The academic and extracurricular road to becoming a physician is long and arduous (Lin et al., 2014). In the United States, the formal starting point of the premedical pathway is the first year of university. With medical school leaders escalating requirements and engaging in degree-rationing (Jenkins and Reddy, 2016), the structure of medical school admissions creates the conditions for uncertainty and competition (Michalec and Hafferty, 2022). Under these conditions, premeds' reputations precede them, as for many decades the "premed stereotype" has percolated within academic hallways, depicting premeds as intense, competitive, hard-working, and constantly stressed (Sade et al., 1984; Conrad, 1986; Leigh, 2022; Lin et al., 2014; Sims et al., 2023).

The extant literature on premed stress has focused on what students are stressed about as well as the impacts of stress on the students. For example, premeds report feeling stressed about their academic performance (Garriott and Nisle, 2018), future career (Lovecchio and Dundes, 2002), debt and finances (Burr et al., 2023), ability to matriculate into medical school (Aspelmeier et al., 2012), peer relationships (Sims et al., 2023), and faculty interactions (Kim and Sax, 2009). Scholars have also examined the relationship between the presence of stress and attrition, emphasizing students' intrapersonal coping resources that mediate the relationship between stress and falling off the path (Grace, 2017, 2018, 2021; Bynum et al., 2023; England et al., 2017). With the exception of Grace (2017, 2018, 2021), this body of work on premed stress tends to conceptualize stress as a monolithic entity that students equally experience as a part of the premed experience and much of the variation is explained by individual-level factors (e.g., this student has depression or that student has negative coping skills). Underexamined is how a student's values or coping resources might be shaped by their background, interactions, or the structure of higher education in the United States.

Drawing upon twenty-seven interviews with first-year premedical students at a large public metropolitan university, we highlight how insiders—that is, students who have at least one parent with a college degree (Sims et al., 2023)—and newcomers, or students who are first generation college students—arrive to college with different relationships to stress in the first place. Insiders are much more at ease with stress whereas newcomers feel more confusion and discomfort. Crucially, when premeds are comfortable with stress, they interpret stress as a part of the professional process; if they are not, they interpret

* Corresponding author.
E-mail addresses: tun18006@temple.edu (C. Tickman), tul69621@temple.edu (L.D. Olsen).

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stress as a sign that they might not be cut out for the profession. We contextualize the social experience of stress as a part of the upper- and middle-class cultural capital of insiders, arguing that comfort with stress is an overlooked mechanism for reproducing inequalities in health professions education.

2. Background

2.1. Premedical socialization

Within the sociology of health professions education, there is a longstanding interest in professional socialization (Jenkins et al., 2021). Premedical students are at the beginning of the professional socialization process and are thus subject to two, reciprocal forces. On the one hand, premeds are socialized into the profession by the top-down and formal structure of medical school admissions and premed requirements (Conrad, 1986; Merton et al., 1957); on the other hand, premeds are socialized by each other, via interactions, storytelling, and collective sense-making (Becker et al., 1961; Everitt et al. 2021; Hafferty, 1988; Vinson, 2019). The school structure and student culture iteratively inform one another over time; however, in any given academic year, when premeds arrive to university campuses, their university's approach to advising, instruction, and organizing resources fundamentally patterns the peer-to-peer socialization. In other words, the top-down structure constructs the dilemmas that premeds collectively attempt to solve from the bottom-up (Becker et al., 1961).

When applied to the case of premed stress, we can observe how the structure of medical school admissions creates the conditions for many sources of stress, whereby premeds equally confront this cumbersome pathway to medical school (Lin et al., 2014). Moreover, as Conrad (1986) described, despite all of these requirements, there is the simple—yet unnerving—fact that there is no magic formula for getting in. Formal advisors of premeds can speak to these requirements and strategize ways to put one's best foot forward, but they cannot guarantee that a premed will be able to earn a spot within a medical school cohort. Therefore, with top-down professional socialization, premeds confront substantive stress—e.g., finding the time and energy to stack their C. V.—in addition to the hovering uncertainty that their already-packed schedule and excellent GPA will not be enough.

In response to these substantive stressors and overarching ambiguity, premeds turn to each other in their quest for information on how to navigate these problems and gain clarity in the process (Conrad, 1986; Vinson, 2020; Underman et al., 2022). Whether it is in collectively solving practical problems, like deciphering how to approach learning the material in their courses (Knopes, 2020), or whether they should even go to class or utilize their time differently (Everitt et al., 2022), or how to manage their nerves in the anatomy lab (Vinson, 2020), students "collectively set the level and direction of their efforts to learn (Becker et al., 1961:435). They also engage in emotional socialization, whereby they actively construct the desired characteristics of a future physician—one who is cool, calm, and in on the joke (Hafferty 1988)—or uncritically circulate the myth of a feared "cutthroat" premed other (Conrad, 1986). While student culture tends to be theorized at the level of an individual school, with extra-organizational technologies like Reddit and TikTok, premed student culture is not bound to a particular university (Underman et al., 2022).

Within this body of work, stress is an assumed part of the premed experience, but there is very little discussion about how students are socialized to experience, understand, or metabolize stress. From the bottom-up, student culture perspective, we could see how stress would both be interpreted and mediated. With regard to the latter, in a survey and interview study of 364 premedical students at a Midwestern research university, Grace (2021) found that fellow premeds—while understanding and supportive of each other with regard to stress—often *amplified* each other's experience of stress. In terms of students' collective negotiations and understandings of stress, one limitation of the peer socialization literature is the assumption that there is a monolithic student body, when it is clear that various obstacles along the path are not experienced equally. In the next section, we draw upon the literature on the social reproduction of inequality within institutions of education to better identify how premeds might interpret stress differently.

2.2. Social reproduction of inequality

Operating in the Bourdieusian tradition, Michalec and Hafferty (2022) show how the field of premedical education rewards elite forms of economic, social, and cultural capital to explain why students with less economic resources (*economic capital*), fewer social connections to the medical field (*social capital*), and less ease in fitting into the premedical culture (*cultural capital*) face more obstacles as they attempt to navigate the premed pathway (see also Sims et al., 2023). Premeds with more *economic capital* will be able to supplement their instruction with tutors or study materials—and have the luxury or more time to dedicate to their studies because they do not need to work on the side. Students with more economic capital are more likely to have the kind of *social capital* that grants them greater access to clinical experiences and professionals, which not only helps them build their resumé but also provides them with formal and informal socialization into the medical profession. These explicit and implicit lessons about what they need to know and how they should act contribute to these students' already-well-formed *cultural capital,* or their often taken-for-granted knowledge and dispositions about how to comfortably thrive in institutions of higher education and work.

The social reproduction of inequalities literature pinpoints how cultural capital—a person's knowledge, skills, tastes, and dispositions—operates as a subtle mechanism by which students from more socioeconomically privileged backgrounds are rewarded in institutions of education (Bourdieu, 1986; Stuber, 2006, 2011; Gorman, 2000; York-Anderson and Bowman, 1991; Calarco, 2014; Lehmann, 2013; Jack, 2016, 2019). Precisely because institutions reward one form of cultural capital over another, following Sims et al. (2023), we conceptualize this highly rewarded cultural capital emanating from well-resourced families as *insider cultural capital* and cultural capital that stems from less-resourced, first-generation college students as *newcomer cultural capital*.

Pivotal to *insider cultural capital* is both an enterprising entitlement toward achievement (Lareau, 2003) and displaying an emotional disposition of ease (Khan, 2011). As Jenkins (2020) has elaborated, there is a strategy in "playing the game" to get into medical school—and this strategy is taught and cultivated in insiders before they arrive to college. From knowing how to advocate for oneself to going to office hours, the cultural capital that helps students thrive within education is one of proactive entitlement and ease in the face of pressure and competition (Friedman, 2013). Comparatively, students socialized with a newcomer cultural capital are less likely to know that they can ask for an extension, or that professors want to help during office hours (Jack, 2019; Stuber, 2011). Newcomer cultural capital is one of deference and discomfort within institutions of higher education.

Institutions of higher education are set up to reward students with insider cultural capital. For example, the structure of how resources are distributed often places the onus on students to seek out information or help, which will subtly reward students with *insider cultural capital* because they have an orientation toward self-advocacy (Calarco, 2011; Jack 2014). As another example, as Calarco (2014) has shown, it is precisely in response to ambiguity—that is, teachers not having clear instructions—that differences in student cultural capital rears their head. Students with insider cultural capital are more likely to ask clarifying questions as opposed to newcomers, adopting a "strategy of negotiation" as opposed to a "strategy of avoidance". Finally, as Lehmann (2013) has documented, newcomers might feel especially apprehensive and marginalized when on preprofessional tracks like medicine and law. A key distinction in thinking about the role of cultural capital is

transition from high school to college is whether students conceptualize—and experience—it as a "next step or new world" (Jack, 2016:3). In what follows, we bring the social reproduction of inequality literature into the peer socialization literature to illuminate how orientations toward stress are integral to insider cultural capital and newcomer cultural capital.

3. Data and methods

These data were collected as a part of a larger, longitudinal study involving premedical students (premeds) by a research team of three undergraduate students and one professor. To capture the experiences and expectations of first-year premeds, we interviewed students attending a large, public metropolitan university in the U.S. There were approximately 3,500 first-year students enrolled in this academic year and we contacted every first-year premed who declared their professional intentions with the advising office, either via their provided email or through undergraduate friend networks. Of the 213 potential respondents from this pool, twenty-seven students agreed to participate in the study. Each respondent received a $20 Amazon gift card in compensation for their time and were assigned a pseudonym to protect their confidentiality.

In addition to administering a demographic survey at the start of the interview, we asked a series of semi-structured questions about their experiences and expectations as premeds. The demographic survey asked respondents to self-report their race, ethnicity, parental income, highest parental education level, parental occupations, and gender identity. During the interview, we asked them questions such as: their motivations for—and concerns about—becoming a doctor; their rationale for their major selection (and minor, if applicable); their overall impressions of their first-year courses (both required for their major/premed and general education courses); their perception of the course environments; why they thought the curriculum was structured the way it was; how they navigated the premed pathway and approached finding resources so that they could prepare a competitive application; and, finally, their advice for future premeds. A majority of the interviews were conducted in person; however, some were conducted over Zoom per respondent request. Ranging from 23 to 47 min, interviews averaged around 30 min in length and were recorded; upon completing the interviews, the research team had the transcripts transcribed.

The interviews began in September 2023 and concluded in April 2024, spanning the first academic year for this cohort of premeds. Of the twenty-seven interviews, an overwhelming number of respondents (85 %) identified as female (n = 23), while only 15 % identified as male (n = 4). Additionally, none of our respondents identified as queer/non-binary. In terms of race, 48 % of those interviewed identified as Asian (n = 13), 22 % identified as Black/African American (n = 6), 14 % identified as White (n = 4), 7 % identified as Latinx/Hispanic (n = 2), and another 7 % identified as Multiracial (n = 2). Nearly half of the students (n = 13) identified as a first-generation college student, and their parental income levels were in the lower two quintiles; the remaining students (n = 14) had middle to upper parental income levels. While all students declared themselves premed, there was a range of majors; however, biology (n = 12) and neuroscience (n = 4) were among the most common majors. While we do not know the demographic information of the 213 declared first-year premeds, compared to the rest of this institution's undergraduate population, this sample has more Asian students and less White students; however, it is largely representative with regard to Latinx/Hispanic, Black, and multiracial students. Similarly, we oversampled on first-generation students, as just about one-third of this institution's overall population is first generation.

We analyzed the transcribed interviews in an iterative and collaborative process (Saldana, 2015). First, each research team member took five of the transcripts, which were printed, and began thematic coding by hand. Each member of the research team had the same five transcripts, so when the research team met, we discussed each of our themes, notes, and agreed upon a set of preliminary codes. We then returned to the data and coded some more interviews, utilizing a series of research meetings to calibrate and work through our respective and collective impressions. After we had reached a level of consensus, we imported the transcripts into Dedoose and systematically coded the data with our agreed-upon codes. Some of the codes we focused on were: first generation students' impressions of the premed program; students' involvement with the premed advising office; stereotypes about premed students; beliefs about what doctoring will be like; and, as the focus of this paper suggests, students' sources and experiences with stress as first-year premeds.

To contextualize our findings, it is important to discuss our data's limitations. First, we only have interviews with students from a single university; it is possible that other universities might have better formalized resources or better programming in place to demystify the process for their first-year premeds. Second, it is possible that a self-reported group of declared first-year premed students might exhibit more stress than all premeds (see also Conrad, 1986). Third, these presented findings are not longitudinal, and therefore we cannot know yet whether or not the students who were comfortable with stress stayed on the premed path or the students who were doubting themselves left. Fourth, we did not objectively measure stress and therefore it is possible that when students invoke the word stress, they could be capturing different things. Fifth, our sample's gender and racial distribution could skew the results; however, given the presence of female and Asian students on both sides of the insider-newcomer divide, we feel confident we are capturing an impact of class-based cultural capital.

4. Findings

While we never asked premeds directly about stress, every premed talked about it. And while some premeds discussed as an individual-level experience and phenomena, just over 85 % of our sample described their stress in relation to others, whether it was that they witnessed a peer's stress, discussed their stress with fellow premeds, or compared themselves to others resulting in an amplification of their stress. In what follows, first we detail how insider and newcomer premeds arrive to campus with different forms of cultural capital related to stress, then we outline how they perceive formal advising resources, confront and learn about stress from their peers, and subsequently metabolize that stress.

4.1. Arriving to campus

Starting college can be intimidating for premeds. Not only does the transcript hold significant weight, but the various extracurricular demands intensify. Premeds must earn stellar grades, engage in meaningful volunteer and leadership activities, gain hours of clinical exposure, and, of course, do well on a nearly 8-h MCAT exam. They also must navigate an historically competitive career while accessing and filtering information necessary for planning their desired futures (Conrad, 1986; Sims et al., 2023). But not all students arrive to college prepared to tackle all of these necessary tasks—in other words, premeds arrive for their first year with different resources, or forms of capital, in tow.

We focus on two central dimensions to the *insider cultural capital*: an entrepreneurial attitude and a disposition of ease. Paul, a South Asian male insider—that is, a student whose parent(s) had graduated college—started his first-year ready to hit the ground running. When we were discussing how he approached his premed education, he oriented his remarks towards future premeds, stating: "I think advice I'd give future pre-med students would be to always be proactive. Don't put things off. Always look for something you can be doing, which you'll enjoy, and also be able to gain a good experience toward your pre-med goals." He described this approach as such a given—this is how things were, this is how you had to act—with an air of hard-earned wisdom, almost at odds

with his first-year status. In many ways, as other scholars have shown about the premed pathway (Lin et al. 2015; Michalec and Hafferty, 2022), Paul was not wrong, as premeds have a tremendous amount of activities to accomplish, which begin as soon as they arrive to college and other scholars have shown these activities to be a large source of stress. More than the need to accomplish these tasks, as Paul makes explicit with his advice for future premeds, premeds must have the insider cultural capital orientation towards being proactive.

Given that we spoke to Paul in his first semester of college, he likely arrived to campus with this entrepreneurial spirit in tow. When Kristen, a white female insider began as a first-year premed, she was not flustered by the competitive culture shrouding their existence. In fact, as she expressed, "I went to a private high school, so it was a very competitive environment there." She explained that she felt at ease in this kind of environment because she had experience in how to navigate it. As Kristen continued,

> I don't surround myself with people who are like, "What'd you get on this test? What'd you get on this? What's your grade?" I don't surround myself with people who are going to make me feel like I need to compete with them … I definitely think my high school really prepared me. I don't think the classes are hard. I actually think they're really easy. In bio, we get a cheat sheet for every test. I mean, I like it, but I don't think that's good … I know how to make a cheat sheet. I know how to make a study guide. I know how to use small font and what graphs I need … In high school, I was in a program where I could shadow doctors. So I've already shadowed eight different types of doctors.

We quote Kristen at length to show how Kristen's high school experience, as she consistently invoked, set her up to tackle the premed pathway—both through the opportunities they create, like shadowing and test prep, but also through cultivating a sense of confidence in the face of the stressful components of the premed path. In other words, Kristen's high school provided her with insider social and cultural capital that would help her reap rewards along the premed pathway.

Not only did her high school explicitly facilitate her ability to shadow eight (!) different physicians, but her high school equipped her with study skills, social approaches, and, most notably a sense of ease and comfort within a competitive premedical environment. Similarly, an insider first year, Ina, who is a South Asian woman, said that not only was she quite comfortable with the "cutthroat" environment of the premed journey, but thrived within it. She saw it "even in my friends, some people are an extremely cutthroat type … and I feel like I fall more at the cutthroat end as well." She elaborated, saying "there's that inherent competitive nature I think that comes with being a premed." Ina was so comfortable with the competition that she thought it to be inherent. Perhaps most revealing of the degree of ease Ina had with the competition and stress that was "inherent" to the premed path was her additional remark that "I think there is an unspoken agreement that as a premed student you should have a lot of work and that you should be stressed." Ina's remarks are also reflective of how Paul took for granted how necessary it was to be proactive.

Similarly, Jack, a multiracial male insider, confided that he was worried he was "working too hard" and that he did not "want to have gray hairs by the time" he was 23, but then he quickly added "but, I live off stress, I guess, which has its own benefits, but also its costs." While Jack detailed his concern about the physiological impacts of stress, he also revealed his deep comfort with—and perceived benefits of—these high stress levels. In sum, the insider students appear to arrive to college ready to proactively tackle the workload and be comfortable with the attendant stress. While it is fully possible that their stated comfort with stress is more performative than internalized, this profile of *insider cultural capital* is what peers observe.

In contrast, Kelly, a South Asian female newcomer—or, first-generation college student—possessed more uncertainty than ease about the adjustment to this collegiate environment that required an entrepreneurial and anxious spirit. Directly implicating her newcomer status when discussing how bewildered she felt when she was trying to figure out how to set up her schedule, Kelly said, "so, I'm a first gen student, so my parents can't really answer any of the questions, there really wasn't anyone to ask." Similarly, Faye, a Black female newcomer, said that when she arrived at college wanting to be premed, she wanted to "make sure [her] plan was set." She explained further, "I know it's a lot of schooling and stuff and right now I just want to make sure I am on the right track. Being off track is really what's concerning me." Jackie, a Latina newcomer, was also still feeling out her way around in this new collegiate environment. She confided, "I'm not sure how to engage with other premeds or how to find them, so I don't know." Kelly, Faye, and Jackie point to lacking the insider social and cultural capital, not knowing who to talk to or what they need to be proactive about, as they started college as a premed—sowing further unease.

4.2. Formal advising

After arriving at this university, premeds must officially register with a central university advising office. This advising office has staff that can guide students along the premedical—as well as other health professions—pathway and has many online resources that can help students plan their coursework and extracurricular activities. But even though these formal resources are available, both insider and newcomer students voiced a sense of confusion about the premed advising office and what, exactly, they could receive and expect from them. In general, they expressed a sentiment that the advisors were not providing them with the support they needed; however, insider students inflected their accounts with a sense of entitlement whereas the newcomers aired more resigned acceptance along with their confusion.

For example, Elise, a South Asian female newcomer, said that first-year premeds like her were "just completely confused." Elaborating further, Elise said, "I wish there were more resources that would ease those concerns at a freshman and sophomore level because right now I feel like all the resources are very helpful towards juniors and seniors going through the process." She recounted a specific personal interaction with the premed advising office, where they "just told me to go do research about all of these things" and that it was like "talking to a government agent who couldn't disclose information." As a newcomer, Elise highlighted why the advising office could play a more active role in helping guide premeds, stating, "I feel like with finding research opportunities of finding a person to shadow or just anything in general, it feels like you have to do a lot of your own research and that seems a little unfair knowing that there's a hospital right across the street that the university is affiliated with." In effect, Elise points out how the premed advising office both assumes and reinforces insiders' elite social and cultural capital, despite hypothetically having access to resources that could even the playing field. In fact, on the advising office's website, they put a short list of hospitals to contact for shadowing opportunities, saying "we used Google to find all of these, so if we can … you can too!"

Similarly, Marisa, another newcomer who is a white woman, explained how her interaction with the premed advising office left her confused and not reassured. She had approached an advisor hoping to receive clarification about her course planning and the advisor told her "not to worry about it right now." Marisa recalled her inner monologue after this advising encounter, saying, "So is this something I should be thinking about right now? Is it not? Those are the kinds of things that I'm unsure about when it comes to my career path." Without the formal guidance, and despite the office's attempted reassurance otherwise, Marisa *was* worried. And Kailey, a newcomer Latina woman, pointed to the stakes that this uncertainty with the advising office elicits, noting how "people make mistakes and everything, but I am definitely scared that I am doing everything right and then at the end of the day, my last semester, I'll be missing certain classes." For Marisa and Kailey, the premed advising office's approach left them feeling stressed, an ironic outcome given the manifest function of the office.

Just as Elise, Marisa, and Kailey perceive gaps in formal resources, emanating from the advisors themselves, so did Jack, a multiracial insider man. In response to a question in the interview about his experience with the premed advising office, Jack said that they have "not been it" and that they were "actually really sucky." He was frustrated with them after a visit, where he said that they gave him "like very, very basic rudimentary information that you could Google. And then they were like, 'oh yeah, just come talk to me next semester.' And I just felt like that was pretty useless … I hate to say, anyone could tell you this. If you talked to a premed for 5 min, you'd have all the information they gave me in 30." Rather than being confused, Jack viewed the premed advising office with disdain and knew to turn elsewhere for information. There was an air of entitlement in his orientation towards the premed advising office's services. Counter to the newcomers, insiders were more angry than uncertain following their interactions with formal advising.

4.3. Peer socialization

Premeds confronted and learned about stress from their peers. Given our data collection method of in-depth interviews, we are able to provide evidence of students' perceptions and beliefs about peer interactions, rather than direct evidence of interactions themselves. Most students, regardless of their socioeconomic background, relayed impressions of premeds consistent with this hyper-competitive and cutthroat archetype (Conrad, 1986; Sade et al., 1984), utilizing words like "fake and superficial", "go-getter", "smart ass", "try-hard", "most stressed out, and "those kids" to describe their typical peer. The ease and comfortability with stress that are a part of *insider cultural capital* can be helpful in navigating the various potential triggers for stress, many of which emanate from how premeds engage in comparative—and competitive—thinking. This insider cultural capital contained a comfortable disposition with competition and stress.

For example, Hope, a South Asian female insider, summarized many students gripes about their peers by saying that premeds are "already trying to do so much … I know med schools are getting harder and harder to get into, so I feel like the stress starts when you're already just a freshman. In other majors, it's not really like that." Hope was worried about "the stress of getting so much experience to get into med schools and all the work that we have to put in." She then implicated her peers, particularly "upperclassmen, people around me, *their stress will rub off on me* sometimes." Fiona, another South Asian insider woman, echoed Hope's remarks, saying how "*everyone is saying it's so difficult*." This process where "experientially similar others" can amplify stress has been well-documented by Matt Grace (2018). But the ease with which students seem to respond to this immediate stress and competition had different airs, depending on what students brought with them from their upbringings.

Hope further helps illustrate that point. She had continued describing some of the comparative thinking that could be intimidating, explaining "I know there was this premed [high] school that a lot of people went to in [neighboring state]. I'm friends with a few of them and they've just told me everything they've done through their high school and it just made me feel a little under-prepared. But yeah, I think that, because then they already know what to do now and they've already started putting on a lot of work." Hope highlights the *insider cultural capital* that her fellow insider peers have, that she reinforces via interactions with them, and how that can make her feel "a little under-prepared." But as she went on and elaborated her thought process, it became evident that she marshalled her insider social and cultural capital to feel at ease amidst this competition. Hope explained, "growing up I always try to take the highest class in high school and stuff, so I think that's my internal factors and then external would just be the people I'm with." For Hope, her "internal" factors capture her insider cultural capital, whereas her external factors point to how she surrounds herself with the top students and that both reflects and supports her drive.

Reflecting on her interactions with her peers, Ruby, another insider first-year student who is a South Asian female, said "everyone wants to do research because everyone and their mother is premed. And so yeah, I think that's really scary because you're like, 'oh, I have to get this done now. I have to do this now. I've been here for three weeks and I'm already like, I should have gotten my internship already." As the conversation continued, it became clear that Ruby was sifting through this information with more ease and perspective, as she gave an example from her biology course, where she displayed how she interpreted students' competitive spirits: "My bio class, I think because it's an honors class, I think a lot of people take themselves really seriously, which okay, sure. But also it's like, guys, we're all 18 in intro to Bio. It's fine, you can calm down. People will laugh a little too hard at the professor's jokes and it's kind of like, okay, but it's fine." For Ruby, she was able to confront the "really scary" competitive environment with an insider's ease, contextualizing the actions of premed peers and laughing it off.

At first glance, the newcomers described their peers and these interactions in a similar manner as the insiders. Hannah, a white female newcomer remarked upon how "premed students are probably the most stressed-out population of students here that I talk to … they are always worried about how to make themselves look better for the future." But as Hannah continued, her concern started to emerge, as she described wanting to avoid other premeds—akin to what Sims et al. (2023) found about newcomers' approaches to premeds—and was struck by how palpable this stress was in the environment. Whereas insider Hope embraced and leaned on her peers, newcomer Hannah shied away from them. Similarly, when she started her first year of college, Kailey, a Latina newcomer was taken aback by how "competitiveness starts already even as a freshman." Kailey was hesitant in this space, say she had made only one premed friend so far, a fellow newcomer Latina, remarking how "one tends to go in the comfortableness." The newcomers felt much less comfortable entering into this premed environment than the insiders.

While the insiders were learning about all the things they needed to be stressed about, the newcomers were learning both the substance and existence of all the stress. Marisa explained how she confronted—and continues to confront—this stress in the everyday interactions of her classes, starting with saying how "there are definitely a lot of people in my classes who I can't stand, a lot of premed students … really difficult to hear every day, 'Oh, I got a 70 on that test, that's so bad … how is this going to affect my GPA? Maybe I should withdraw from this course so it doesn't hurt my GPA in the long run.'" Similarly, Claire, a South Asian newcomer woman, said, "I prefer to do my best than to be the best, but that is not an option when it comes to playing in the medical sphere. I will say that there's already a lot of—I don't even know how to describe it in my class—the go-getters in my class. So the people who are already kind of smart asses. And I'm not really, I can't even handle people like that. I can't." With both of their invocations of "I can't", the newcomers were pointing to how their peers' palpable stress was something to avoid, akin to the strategy of avoidance that Calarco (2014) has documented in middle-schoolers. Moreover, as Claire notes, she has less of a cutthroat, hypercompetitive orientation toward achievement, which is not the "competitive kid capital" that Friedman (2013) notes as pivotal to success in American institutions.

4.4. Metabolizing stress

Lastly, our interviews with premeds revealed that insiders and newcomers metabolize stress differently. Sarah, an East Asian newcomer, relayed a moment where she confronted a classmate's stress. She began explaining what went through her mind when talking with a friend in neuroscience:

> And in my head I'm like, 'Oh, she has it all together,' and then she's like, "Oh, I'm actually really struggling.' And I feel for her, but also it makes me worried that, 'Uh-oh, I thought she had it all together. Will

> I be able to have it all together?' … Honestly, right now, my biggest concern is getting into medical school on the timing that I want. Because I have some friends who are about to graduate, and they're taking another year to study for the MCAT, or they need to take the MCAT again. And it's just not the timeline they thought. So I'm a little worried. I feel like I can do well in school. I'm only a freshman, so I feel like I can do well in school for the next few years. But definitely following the timeline that I want might be a little difficult.

As newcomer Sarah thoughtfully shared, she began to question her own capabilities and limitations within the premed curriculum. From what she has witnessed with her peers, she is sensing a road of difficulty and expresses uncertainty about her future.

When reflecting on their career paths and experiences thus far within the curriculum, newcomers frequently expressed hints of doubts when considering whether or not they were cut out for the premed path. When asked if they had any worries about being a premed, Latina newcomer Jackie relayed, "I'm worried I'm not going to be able to do what I set out to do, like succeed", while white newcomer Hannah expressed, "it's tougher to get into med schools or they expect more from you and I just don't know if I can. I'll do my best, but I just don't know". Likewise, newcomer Louise, a Black female answered, "I am nervous about how I'm going to get there … I don't know there's so many things that can happen, I could not end up becoming a doctor, I could just end up giving up." All three of these newcomers' narratives show them having second thoughts about whether or not they will succeed in the curriculum and accomplish their goals.

In contrast, Ina, an insider we met earlier, also had an experience in comparing herself to others, but instead of freaking out that she could not do it, Ina was stressed precisely because she *was not stressed enough*. As Ina relayed:

> This is what I expect, this is the amount of stress, the amount of work I expect to see as a premed student, and I'm not there." I know I'll probably be [stressed] in the future, but there's always that nagging in my brain, that, "Am I just not doing enough?" … I was talking to my friend about this a few days ago actually. This semester, especially, I was concerned with how little work I had to do, because I would study, but it felt like significantly less than even last semester, and this is finals week, and I think I've watched about three to four movies already … so, just little things like that, I think it's just seeing the people around me, because some of my friends who are in the same courses have been studying a lot more, and it's like they've had to put more time towards it, and I feel like I haven't, so that's where it stems from.

Both Sarah and Ina's remarks exemplify that their metabolization of stress involves their comparisons to others, but they take them in different directions: worrying and maintaining confidence in the face of failure. Like Sarah, Louise, and Hannah, newcomers tended to express worry when metabolizing stress, while insiders like Ina and Dianne exhibited confidence despite failure when dealing with stress.

A difference between the accounts of our newcomers versus our insiders was even if insiders were facing challenges directly within the program, or were envisioning prospective scenarios, they still maintained confidence. For example, insider Dianne, a white female shared, even though she had taken a quantum mechanics course in high school and had a "fresh background in it", she relayed:

> I realized that when I got my exam back, I realized I had just made so many ridiculous mistakes, putting the numerator of the equation where it should have been in the denominator, stuff like that, just mixing up my formulas and forgetting to bring a negative sign to the next step of my calculation or whatever. That exam went really bad, but then the next one I got, I think a 98 on. It was a huge improvement. And then I actually just took one on Monday and I got an 81. The class has been going a lot better ever since the first, I guess, month or so of the course.

Dianne was confident in her errors, handling the stress of the hard courses well. Perhaps more indicative of this confidence were the many insiders who responded to our question, "do you have any concerns about your career path?" with concerns about delivering bad news to future patients or how they will retain work-life balance when they want to start families, which was in stark contrast to newcomers who answered the question with concerns about whether they will make it into the field to begin with.

5. Discussion

In talking to first-year premedical students, the presence of stress looms large. Whether it is their own personal experience with stress or their observations of others, stress permeated the premed atmosphere. Upon examining first-year premeds further, however, it became clear that not all students perceived the presence of stress in the same way. In fact, insider premeds—that is, students who had at least one parent go to college and had the attendant forms of capital that helped them thrive in institutions of education—arrived to college with cultural capital that rendered them comfortable with competition and stress. In contrast, newcomers—that is first-generation college students—started their university experience with a different, more uneasy and confused, relationship to stress.

After arriving to campus, premeds have a lot to accomplish to put together a competitive application for medical school. Insiders and newcomers alike described seeking out formal advising services to help them alleviate stress and navigate the pathway—and both also felt that these advisors were not helpful to them. But there were nuances to their disappointment in formal advising, whereby insiders were more likely to express disdain towards the advisors and an entitlement toward the services and newcomers were more likely to voice feeling more confused and a resigned acceptance of their lack of answers. Formal advising services seem to reward insider cultural capital, as they quite literally encourage their students to Google opportunities. As premeds turn to their peers for informal guidance along the career path they also confront and need to manage their peers' stress, where, once again, newcomers are more bewildered and intimidated by displays of stress than insiders. Finally, we show that newcomers are more likely to express doubt in themselves while insiders are likely to maintain their confidence in themselves.

There are similar empirical findings in different national contexts, albeit studying medical students rather than premeds. For example, in their focus on first-generation Australian medical students' journeys of extreme social mobility, Southgate and colleagues (2017) described how students from low-income and first-generation backgrounds believed that they were "not really 'entitled' to aspire to medicine", especially in contrast to the "legacy kids" (Southgate et al., 2017: 250-1). Legacy kids are children of physicians; as Laurison and Friedman (2015) have documented, children of physicians are 21.6 times more likely to become physicians than the rest of the population. In a variety of ways, the students in the Southgate et al. (2017) study had to negotiate how they "fit" into the medical profession, and, they argue, needed to strategically incorporate the *insider cultural capital* at different points to feel like they would be able to continue their journey. Similarly, Beagan (2005) found that Canadian students did not feel this "fit", pointing to the strength of *insider cultural capital*, or the behavioral and cultural knowledge that people can summon to fit in or feel at ease in particular groups or contexts.

Building off our empirical findings, we posit a couple of theoretical contributions. First, we propose that orientations towards stress are an important component of cultural capital that are linked to the reproduction of inequality within the medical profession. Because the insider students with more economic resources arrived at university with their insider cultural capital in tow, they were able to encounter the premed stress with far more ease. Ease is a sign of the contemporary elite (Khan, 2011); its absence, though, means that premeds do not feel like they "fit"

(Beagan, 2005; Grace, 2017, 2018). This insider understanding of stress dominates premed culture, and therefore these insiders are more likely to perpetuate the conditions under which high levels of stress and competition get normalized. In contrast, students who do not arrive at university with this cultural capital—students who are first-generation, or newcomers—need to learn the this ease, and some seem to doubt their own capacities in becoming a physician as a result. Moreover, social and cultural capital are connected in that newcomers's isolation from insider premeds could limit their ability to acquire the insider cultural capital.

Second, because some students need to learn this insider cultural capital, we show an overlooked form of emotional socialization via peers. To that end, we hope to bridge micro-level approaches to studying stress that emphasize intrapersonal coping resources and macro-level approaches to examining stress that highlight structural sources of attrition, in turn showing this *interpersonal* mechanism by which stress is confronted and learned. It is not just coping resources and social support about stress that matter, students must learn how to experience stress—and how to normalize it—and that could be a subtle mechanism for reproducing inequality.

In addition to our empirical and theoretical contributions, we believe our study has policy implications for universities. University leaders should introduce, develop, and/or advertise formal resources for first-year premeds—not only could this help address some of the confusion and uncertainty stressors that all students face, but it could also be designed to help level the playing field with regard to the reproduction of inequality in the medical profession. University faculty and advisors should learn about the presence and implications of the *insider cultural capital*, given its potential uneven impact on students. Finally, as Brosnan et al. (2016: 849) importantly note about medical students who do not have the cultural capital of elite professions, students have important forms of cultural capital that they use to relate to and treat patients, therefore it is also important for universities as well as medical schools to assign higher value to these forms.

CRediT authorship contribution statement

Caitlin Tickman: Writing – review & editing, Writing – original draft, Project administration, Methodology, Funding acquisition, Formal analysis, Conceptualization. **Lauren D. Olsen:** Writing – review & editing, Writing – original draft, Supervision, Resources, Methodology, Formal analysis, Conceptualization.

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Data availability

The data that has been used is confidential.

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