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**To cite this article:** Paula S. Nurius, Yasaman S. Sefidgar, Kevin S. Kuehn, Jake Jung, Han Zhang, Olivia Figueira, Eve A Riskin, Anind K Dey & Jennifer C Mankoff (2023) Distress among undergraduates: Marginality, stressors and resilience resources, Journal of American College Health, 71:5, 1445-1453, DOI: [10.1080/07448481.2021.1935969](https://doi.org/10.1080/07448481.2021.1935969)

**To link to this article:** <https://doi.org/10.1080/07448481.2021.1935969>



Published online: 07 Jul 2021.



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MAJOR ARTICLE



## Distress among undergraduates: Marginality, stressors and resilience resources

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### ABSTRACT

**Objective:** This study addresses mental health concerns among university students, examining cumulative stress exposure as well as resilience resources. **Participants:** Participants were 253 first- and second-year undergraduate students (age = 18.76; 49.80% male, 69% students of color) enrolled at a large western US university. **Methods:** Data were obtained from a cross-sectional online survey examining marginalized statuses and multiple stressors alongside coping responses, adaptive self-concept, and social support as predictors of stress, anxiety, and depression. **Results:** Multivariate regressions demonstrated significant associations between stress exposures and lower levels of resilience resources with each mental health indicator (with substantial  $R^2$  of .49-.60). Although stressor exposures accounted for significant increases in mental health concerns, their exploratory power was attenuated by resilience resources (e.g., beta decreases from .25 to .16). **Conclusions:** Better understanding cumulative adversity/resilience resource profiles, particularly among marginalized students, can help universities in prioritizing institutional support responses toward prevention and mitigating psychological distress.

### ARTICLE HISTORY

Received 3 August 2020  
Revised 18 February 2021  
Accepted 25 April 2021

### KEYWORDS

Coping; mental health; resilience; stress; undergraduate

### Introduction

Stress and related mental health struggles are of growing concern at colleges and universities across the country and internationally. Evidence indicates that, on average, university students have worrisome levels of mental health concerns,<sup>1</sup> with some evidence of levels higher than general population peers.<sup>2</sup> Moreover, an increasing trend of students being referred to and seeking mental health concerns are reported in this population.<sup>3</sup> Many substance abuse problems and mental health concerns initially arise during the late adolescent and early adult developmental period—when most young adults attend university—with onset of three-fourths of all lifetime mental health concerns by age 24.<sup>4</sup> Undergraduates have reported higher rates of traumatic experience within the past 12 months relative to graduate students, and greater perceived negative effects of mental health concerns on academic performance such as poorer grades and dropping courses.<sup>5</sup> These contrasts are consistent with related research indicating greater difficulty among undergraduate students in transitioning to college life and greater need in developing a social network and stronger coping skills and self-efficacy in managing academics and personal life stressors.<sup>6</sup>

The university experience can pose considerable strain on students, particularly in the initial years. Stressors come in a range of forms from ongoing hassles, challenging developmental transitions, and more intensive or traumatic

exposures. People can vary widely in their perception of stressors and, thus, the extent to which any given stressor engenders distress. Perceived stress refers to the individuals' cognitive appraisals of and feelings about encountered stressors; of the extent to which the stressor holds harmful implications and exceed the one's capacity to meet or cope with demands. If not mitigated, perceived stress can lead, through both psychosocial and neurobiological mechanisms, to impaired well-being, risking development or exacerbation of conditions such as anxiety and depression.<sup>7,8</sup> Early year undergraduates may be more vulnerable to greater levels and effects of stress given recent developmental transitions of entering university contexts with new challenges combined with less accessible prior support persons and conditions (often due to moves) that might otherwise mitigate stress effects.<sup>9</sup>

Indeed, stress, anxiety and depression are among the most prevalent forms of distress among college students.<sup>10</sup> Yet, students experiencing significant mental health-related symptoms often do not have a formal psychiatric diagnosis<sup>11</sup> and may not be receiving services.<sup>12</sup> In sum, mental health concerns are prevalent among college students, often jeopardizing college success and persisting for years. This paper, thus, focuses on the contribution of common stressors alongside resilience resources in explaining three prominent mental health concerns – perceived stress, anxiety, and

depression – among early college undergraduate students, toward informing strengthened mental health supports.

### **Stress contributors**

Stressors are commonly defined as events or conditions that may be perceived as conveying threat, challenge, demand, or constraint that call into question the well-being and response capacity of the individual being exposed.<sup>13</sup> These include factors commonly encountered within the college domain such as academic and financial pressures, exposure to unfair or discriminatory circumstances associated with being part of a minority status, and transitions that often remove students from familiar people and contexts.<sup>14</sup>

Moreover, students enter the college realm with their own histories of stress exposure and health – with implications for their vulnerability to additional stressor effects. Recent research is illuminating the value of cumulative stress theoretical foundations,<sup>15,16</sup> for examining the relevance of greater or lesser “stacked stressors” such as prior adversities, traumas, and social marginalities as students then engage with the college experience. These stress histories constitute the stress loads with which individuals enter new contexts, including university life. Cumulative stress theories have been examined within cross-sectional characterizations of transitioning high school students,<sup>17</sup> within assessments of adults capturing earlier and later life exposures,<sup>18,19</sup> and within longitudinal data addressing resilience.<sup>20</sup> However, this previous work leaves open the question of what differentiates students who are more resilient to cumulative and momentary stress from those who are not. A better understanding of resilience-fostering factors provides guidance to better support students who are at greater risk.

A robust literature attests that adversities experienced earlier in life can have far reaching life course effects on both physical and mental health and that these exposures are all too common.<sup>21</sup> Approximately 80% of US children and adolescents experience at least one childhood trauma in the form of victimization.<sup>22</sup> Stressors associated with household dysfunction such as caregiver mental health problems, substance abuse, or incarceration are also common<sup>23</sup> as well as chronic stress associated with lower socioeconomic status (SES).<sup>24</sup> Exposure to discrimination and social marginalization similarly carries demonstrated risk for increased stress and mental health erosion.<sup>25</sup> In addition to direct exposure, indirect discrimination exposure (e.g., overhearing or witnessing discrimination toward others or about the one’s group) has been shown to trigger prolonged stress response that can generate distress as well as impair adaptive coping.<sup>26</sup> These negative sequelae are particularly pronounced among those encountering multiform discrimination due to more than one marginalizing status.<sup>27</sup>

The wear and tear of stress-related strain serves to undermine physical health and negatively affect psychological well-being that, in turn, negatively affects both success in educational settings and longer-term health.<sup>28</sup> Physical health and mental health become interrelated in reinforcing patterns, with conditions such as asthma associated with

significantly higher levels of anxiety, depression, and global distress among adolescents and young adults.<sup>29</sup> Such trends appear to be particularly strong among socially disadvantaged populations, with stress, including more subtle forms of strain such as microaggressions,<sup>30</sup> contributing to health disparities.<sup>31</sup>

### **Resilience resources**

Coping strategies for stressful circumstances play important roles in the extent to which these circumstances yield harmful effects, such as increased mental health-related symptoms.<sup>32</sup> Strategies such as self-blame or suppression may have functional short-term effects but tend to be detrimental to mental health over time (*maladaptive coping*).<sup>33,34</sup> Strategies such as reappraisal or acceptance tend to have both short and longer-term benefits in psychological well-being (*adaptive coping*).<sup>33</sup> Importantly, adaptive and maladaptive coping can co-exist: they are not inherently reciprocal (i.e., opposite ends of a single continuum). However, maladaptive strategies tend to have larger (negative) effects relative to adaptive the strategies’ positive effects on mental health.<sup>35</sup>

Social support has been broadly found to be a key resilience resource in shaping coping strategies and supporting psychological well-being, noted recently as protective against the exacerbation of depression symptoms among early-year college students.<sup>36</sup> This resource is contingent upon the availability and receptiveness of appropriate sources of support. Yet, such resources can be circumstantially limited with many college students being away from familiar family and friends, creating at least a temporary deficit in proximal social support. Alongside perceived external coping supports are perceptions of the one’s own personal resources, such as the one’s history and capacity for grappling with and weathering stressors. Resilience has been variously defined, but a common focus is on the ability to recover from adversity and be able to successfully adapt. When students are encountering stressors relatively new to them, the self-conceptions formed from prior life experiences carry social cognitive influence in managing these stressors and their effects.<sup>37</sup> Beliefs that one is (or is not) a quick recovery or “bounce back” kind of person is one key example.<sup>38</sup> Such beliefs are mutable, reflect a perception of agency for resilience, and are precursors for actually being able to approach and engage with stressful circumstances effectively and regain equilibrium.<sup>39</sup>

### **The present study**

Based on cumulative stress and resilience theories, we theorize that multiform stress exposure will be negatively associated with student mental health through multiple conduits. Within a university undergraduate sample, we hypothesize that: 1) stressors at the individual experience and social marginality levels will be significantly associated with lower levels of resilience resources and 2) that these stressors will significantly account for increased mental health concerns as measured by symptoms of anxiety, depression and

stress—three forms of psychological distress found commonly among college students.<sup>10</sup> We also anticipate support for resilience theorizing in that 3) sources of resilience will be associated with an attenuation of the explanatory power of stressors on psychological distress. Relatedly, we anticipate that these resources 4) will sustain significance within full multivariate models controlling for all study variables, demonstrating positive potential for intervention with these mutable assets to foster positive mental health.

## Materials and methods

### Survey methods and sample characteristics

Data are derived from a 2019 survey examining stress and well-being of undergraduate students at a large western US public university. We recruited first-year students through flyers posted around campus, social media groups, and departmental mailing lists. We recruited second-year students from a prior longitudinal study of the same project within this university.<sup>40</sup> We did not seek to definitively establish discipline or major of students and many were ambiguous. Overall a little more than half expressed interest in engineering or technology. We tested for differences across the study variables and found a high degree of comparability, with a marginally significant difference only on anxiety, wherein students with engineering interests were lower. Inquiring students came to an information session in which they consented to the study and completed a demographic survey. Participants were then directed to an online assessment administered via a secured Web platform at the beginning of the academic quarter. All procedures were approved by the university's Institutional Review Board (IRB).

Of those meeting the requirements and consenting to participate 253 completed the initial survey. To participate in the study, students were required to be at least 18 years old, in the first or second year of their program, and available to participate in the full project, and possess a smart-phone for data collection. Average age is 18.76; 49.80% described their gender as male and 50.2% as female. Race/ethnicity make-up of the sample is as follows: 31.22% White, 4.74% Latinx, 48.62% Asian, 3.16% Black, and 12.25% Biracial.

## Measures

### Covariates

We created a Social Marginality Index, calculated as a sum of one point for each of the following characteristics: being an international student or immigrant, having disabilities, being a first-generation college student, or having sexual orientation other than heterosexual. This index approach is akin to other well-known adversity indexes, such as the Adverse Childhood Experience measure<sup>41</sup> and the Sociodemographic Risk Index.<sup>42</sup> Each of these characteristics has been associated with a greater number of barriers to college entrance and to academic success. This index, thus, provides a proxy for occupying one or more vulnerability

statuses—distinct from gender and race/ethnicity—anticipated to be associated with greater challenge and distress.

### Predictors

*Stressors* were assessed in three forms. Major Life Events (MLE;  $M=9.16$ ,  $SD=4.67$ ) were assessed via a 41-item self-report summed index that asked about the participants' experiences with various stressors. This included adverse childhood experiences, other personal and family adversities (e.g., own or family serious health problem or injury, financial crisis, legal problems), peer problems (e.g., difficulty with roommate, pregnancy), or school challenges (e.g., miss many classes or drop more than one, repeat a course). Chronic discrimination was measured by summing the nine item Everyday Discrimination Scale ( $\alpha=.86$ ,  $M=9.89$ ,  $SD=7.35$ ) (EDS)<sup>43</sup> and the 17-item Chronic Work Discrimination and Harassment Scale, both scored on a scale of 0: never-5: everyday ( $\alpha=.86$ ,  $M=10.80$ ,  $SD=9.04$ ) (CEDH).<sup>43</sup> We used the Cohen-Hoberman Inventory of Physical Symptoms (CHIPS)<sup>44</sup> to measure Poor Health ( $M=18.91$ ,  $SD=16.70$ ). The CHIPS is the sum of responses to 33 Likert-style questions about common physical symptoms (0: not a bother – 4: an extreme bother) experienced in the past two weeks with excellent inter-item consistency ( $\alpha=.92$ ).

*Resilience Resources* were assessed in three forms. Coping Strategies were assessed with the Brief COPE<sup>45</sup> – a 28-item measure that, via a 0-3 Likert type scale, assesses both adaptive (e.g., active coping, emotional support, positive reframing;  $\alpha=.85$ ;  $M=1.43$ ,  $SD=0.52$ ) and maladaptive coping (e.g., denial, venting, self-blame,  $\alpha=.74$ ,  $M=0.88$ ,  $SD=0.43$ ). Social support was assessed via the Perceived Receiving Social Support subscale of the 2-Way Social Support Scale (2-way SSS).<sup>46</sup> This subscale measures the amount of perceived emotional and instrumental support received from peers and others—each item is a 6-point Likert scale (0: not at all–5: always) – summed over all the items ( $\alpha=.92$ ;  $M=43.52$ ;  $SD=100.04$ ). Adaptive Self-Concept was measured with the Brief Resiliency Scale (BRS)<sup>47</sup> which is an averaged 6-item measure that assesses via a 5-point (1–5) Likert scale (strongly agree–strongly disagree) one's perceived tendency to “bounce back” and recover quickly in the face of adversity ( $\alpha=.86$ ;  $M=3.32$ ,  $SD=0.73$ ).

### Dependent variables

*Mental Health Concerns* were assessed as a combination of symptoms of stress, anxiety and depression. Stress was measured with the Perceived Stress Scale (PSS)<sup>48</sup> – a 14-item summed scale that measures the intensity of self-reported stress ( $\alpha=.86$ ;  $M=27.66$ ,  $SD=7.54$ ). Anxiety was measured with the State-Trait-Anxiety Inventory (STAI),<sup>49</sup> which is a summed 20 item self-report measure of temperamental (feeling in general) anxiety ( $\alpha=.91$ ;  $M=45.88$ ,  $SD=10.70$ ). Depression was measured with the Beck Depression Inventory-II<sup>50</sup> which is a summed 21-item Likert scale assessing depressive symptoms ( $\alpha=.90$ ;  $M=12.37$ ,  $SD=8.65$ ). Higher scores on the BDI-II suggest higher level of depressive symptoms.

### Analysis plan

After conducting bivariate correlation analyses we undertook hierarchical multiple regressions sequentially entering three sets of predictors for each of the mental health concerns: sociodemographics, then stressors, followed with resilience resources. This procedure tests cumulative effects of the full set of predictors in each model as well as the explanatory utility of each variable set and the individual predictors within the sets, controlling for the shared variance among all model variables. The inclusion of three related yet distinct features of mental health allows assessment of the stability of findings and their interpretation. All analyses were conducted with the “psych”<sup>51</sup> and the “stats”<sup>52</sup> packages in the R environment.

## Results

### Bivariate correlations among study variables

Within the framework of our study questions and hypotheses, the correlation matrix provides insights as to overall associations before undertaking the multivariate analyses. All bivariate correlations were significant and in the expected directions (Table 1). Mental health concerns were significantly correlated with variables capturing adversity stress exposures (marginality, discrimination and major adverse events, poor health) as well as maladaptive coping; and, significantly inversely correlated with variables theorized to support resilient adaptiveness: social support and self-conception of being a more bounce back type, although non-significant with adaptive coping strategy use. Also, as anticipated, stressors were positively related and inversely associated with resilient resources. Table 1 displays this correlation matrix.

### Hierarchical multiple regressions

Hierarchical regressions were undertaken with the following order of variable block entry: 1) demographic information, 2) three forms of stressors, and 3) three resilience resources. The full regression model for each of the three mental health concerns achieved significance (see Table 2). Moreover, addition of each of the predictor sets contributed significant additional explanation of each of the mental health concerns (change in  $R^2$ ) consistent with a cumulative stress and resilience model. Variables from each of the demographic, stressor, and resilience resource sets remained significantly associated, demonstrating unique contribution after controlling for the effects of shared variance among the predictors.

Female gender and social marginality carried significant explanation of all distress indicators, with marginality sustaining significance for anxiety and gender significantly associated with greater distress compared to male students. Latinx students reported less depression but betas were otherwise nonsignificant for these and for African American students. Among stressors, chronic discrimination sustained unique significance for all mental health indicators, with

Table 1. Bivariate correlations among study variables.

	M	SD	1)	2)	3)	4)	5)	6)	7)	8)	9)	10)
(1) Perceived stress	27.66	7.54										
(2) Anxiety	45.88	10.70	.73***									
(3) Depression	12.38	8.65	.66***	.70***								
(4) Marginality Ind	0.78	0.76	.22*	.25***	.20*							
(5) Major life events	9.16	4.67	.28**	.28***	.25***	.19***						
(6) Chronic discrimination	20.69	14.89	.38***	.34***	.40***	.10	.38***					
(7) Poor health	18.91	16.70	.38***	.43***	.46***	.19*	.35***	.30***				
(8) Maladaptive coping	0.88	0.43	.47***	.51***	.49***	.18***	.33***	.25***	.38***			
(9) Adaptive coping	1.43	0.52	-.07	-.04	-.05	.02	.17*	.06	.02	.30***		
(10) Social Support	43.52	10.04	-.37***	-.45***	-.46***	-.14*	-.21***	-.29***	-.25***	-.29***	.27***	
(11) Adaptive self-conception	3.32	0.73	-.59***	-.64***	-.47***	-.15*	-.15*	-.21***	-.33***	-.35***	.11	.32***

Note: \* $p \leq .05$ , \*\* $p \leq .01$ , \*\*\* $p \leq .001$ .



**Table 2.** Hierarchical regressions testing incremental, unique, and cumulative contributions to psychological distress.

	Perceived Stress [ $\beta$ ], n=249			Anxiety [ $\beta$ ], n=248			Depression [ $\beta$ ], n=249		
	Step 1	Step 2	Step 3	Step 1	Step 2	Step 3	Step 1	Step 2	Step 3
F	4.85	9.93	19.23	6.78	13.36	30.03	3.59	13.45	20.15
R <sup>2</sup>	.08	.24	.49	.12	.31	.60	.05	.31	.50
Gender	.23***	.16**	.07	.18**	.09	.01	.14*	.04	-.01
African Amer	.05	-.01	.02	-.05	-.10	-.08	.05	-.01	-.01
Latinx	-.05	-.06	-.09	-.03	-.05	-.08	.02	.01	-.01
Asian Amer	-.01	.03	.01	.13	.19**	.16***	.18	.22***	.19***
Biracial	.03***	.01***	-.04	.18**	.16**	.10*	.07	.04	.01
Marginality	.20**	.13*	.07	.24***	.16**	.09*	.15*	.06	.01
MLE		.08	.05		.13*	.07		.06	-.01
Discrimination		.25***	.16**		.20***	.09*		.27***	.17***
Poor Health		.22***	.05		.28***	.10*		.35***	.19***
Malad. Coping			.28***			.25***			.29***
Adaptive Coping			-.12*			-.04			-.06
Social Support			-.05			-.15**			.20***
Adapt. self-con.			-.39***			-.41***			-.19***

Note.  $\beta$ =standardized coefficient. All model statistics and  $R^2\Delta$  values are significant at  $p \leq .001$ . Female=gender referent group; White=race/ethnicity referent group.  
\* $p < 0.05$ , \*\* $p < 0.01$ , \*\*\* $p < 0.001$ .

poor physical health significantly explaining anxiety and depression, particularly the latter. Major adverse life events were significantly related to all dependent variables in bivariate models, but did not sustain significance in the multivariate models.

With some variation, the full set of resilience resources proved to be additive and distinctive contributors of all three mental health concerns. Within the final models, adaptive coping was significant for perceived stress; whereas social support showed significance for anxiety. Adaptive self-concept was the most robust among the resilience resources set. Use of maladaptive coping strategies powerfully contributed to poorer mental health, suggesting that avoidance of these strategies is associated with better mental health outcomes. It is also worth noting, across all three dependent variables, the variance explained by female gender and marginality status were reduced once adding stressors and resilience resources to the models.

## Discussion

This paper addresses growing recognition of the level of stress among university students and the risks this poses for mental health conditions, that, in turn, lead to subsequent risks for academic success and retention. Our multivariate framework allowed for differentiating between the cumulative and distinct contributions of the students' demographic characteristics, adversity exposures, and resilience-fostering resources, controlling for associations with all other study variables. Results show multiple associations between the students' perceived stress and symptoms of anxiety and depression, with independent contributions from both stressors and resilience resources. Resilience resources are associated with reduced stress and positive mental health.

The inclusion of three related yet distinct features of mental health symptomatology permits examination of the stability of findings across models, inclusive of the social identities of sex, race/ethnicity and social marginality.

Women reported higher levels of all mental health concerns compared to males. Turning to race and ethnicity, we see associations with higher anxiety and depression for Asian students and association with higher anxiety for Biracial students. Lastly, the social marginality index, which captures immigrant, disabled, first-generation, and sexual minority statuses, is significantly associated with perceived stress and anxiety. The attenuation of this effect in the final models suggests the value of resilience resources in mitigating stress for these students. However, the negative bivariate associations with social support and adaptive self-concept indicate that marginalized students tend to be less resourced in this vein, and, thus, merit special attention through university resources.

## Promising possibilities for resilience and coping

Our results support the value of “poly-strengths”—multiple forms of resilience-fostering resources<sup>53</sup>—for mitigating the effects of stressors on psychological distress. Students' perception of themselves as being resilient—as having the ability to bounce back from stressful experiences—is favorably associated with all three mental health concerns.

Resilience helps with maintenance of healthy functioning over time in the aftermath of adversity exposure<sup>54,55</sup> and is strongly predictive of at-risk the students' overall adjustment in college.<sup>56</sup> Histories of experiences such as discrimination, earlier life adversities or losses, and poor health can negatively influence an individual's resilience and mental health.<sup>57</sup> Yet, resilience—in this case a self-conception – is broadly held to be modifiable<sup>58</sup> and thus represents a potential opportunity area for intervention. Resilience-based interventions commonly include targeting skills such as emotion regulation, cognitive flexibility and constructive appraisal processes, and building upon social support to help reinforce resilient striving.<sup>59</sup> Our results confirm that efforts to strengthen resilience should be a prime target for both prevention and remedial therapeutic and support interventions, such as helping students cultivate self-conceptions as

resilient. Given the importance of perceived availability of supportive friends in adjusting to university life,<sup>60</sup> cultivating social support resources provides a concrete and actionable opportunity to potentially mitigate both anxiety and depression.

In addition to making available examples of resilient behaviors, encouragement, and skill building, coping resources<sup>61</sup> are critically important in adjusting to university life.<sup>62</sup> In our analysis, the use of adaptive coping strategies was associated with less perceived stress but effects were nonsignificant for anxiety and depression, whereas maladaptive coping was (negatively) significant for all. Maladaptive coping and depression have been found stronger when levels of adaptive coping are low,<sup>63</sup> adaptive coping may dilute effects of maladaptive coping on mental health. Thus, adaptive coping is a valuable target for supportive interventions.

### Implications

Universities are important points of contact for prevention, identification and treatment of mental health concerns, which are themselves associated with risks such as academic problems. College leaders are noting increases in the severity of the students' mental health concerns and demand for services, changing the roles of campus counseling centers, and requiring new institutional responses.<sup>64</sup> On-campus screening programs<sup>65</sup> and increased messaging about mental health care resources<sup>66</sup> are important, especially for undergraduates.<sup>5</sup> Colleges can better address inequalities by attending to marginalizing characteristics and diverse needs, alongside disparities in service use and effectiveness, and the importance of institutional efforts to decrease student exposure to racism and discrimination.<sup>67</sup>

### Increasing resilience

Our work argues that colleges should add a focus on resilience resources to this portfolio of efforts. Resilience resource effects include increased self-regulation capacity.<sup>68</sup> Resilience skills help individuals to proactively plan, evaluate, and adapt their goals and to foster a positive social support network. They also include strong emotion-regulation skills and problem-focused coping approaches.<sup>69</sup> However, self-regulation may not naturally increase over the first year of college as might be assumed of maturation.<sup>70</sup> Thus, offering students structured opportunities to augment resilience; seek help from positive social supports; and engage in adaptive, engagement coping strategies, rather than maladaptive, avoidant coping strategies, can enhance their self-efficacy and ability to successfully manage stresses in college life.<sup>56,71</sup>

There is a natural synergy between addressing resilience and overall student success. For example, proactive advising (also referred to as intrusive advising approaches) is notable for its reduction of attrition<sup>72</sup> and improved academic success.<sup>73</sup> Because it builds on intentional contact with students, with the goal of integrative understanding of both their circumstances and developing a caring and accessible relationship, it is likely to strengthen the students' sense of social belonging within their university setting; which has

been associated with better physical and mental health as well as academic success.<sup>74</sup>

### Reducing maladaptive coping

Use of maladaptive coping strategies is similar to external stressors in its negative impact on mental health concerns. For example, behavioral disengagement and focusing on negative feelings negatively affect ability to adjust to the stressors of university life.<sup>56</sup> Use of maladaptive coping lowers well-being even when higher levels of perceived social support are present to buffer stress effects.<sup>62</sup> Use of avoidance, disengagement, substance use or similar strategies viewed as maladaptive can offer short-term relief (i.e., functional adaptation), but at a cost<sup>75</sup> including allostatic stress load and overwhelmed subjective experience.<sup>76</sup> Thus, interventions that *reduce maladaptive coping* may be as important as those that *increase resilience* to undergraduate well-being and success.

### Tradeoffs among physical and psychological health

Recent work in health psychology demonstrates that a simplistic view of positive coping may appear to support well-being but can potentially be harmful. For example, believing in system fairness, overall, has been found associated with higher end-of-year psychological health among undergraduate college students.<sup>77</sup> However, beliefs in system fairness do not protect against the reality of ongoing unfair treatment evidenced in studies of the undergraduate experience.<sup>40</sup> Experiencing substantial discrimination compromised physical health at the end of the year, regardless of belief in system fairness.<sup>77</sup> These findings point to the importance of teaching coping strategies those are sensitive to lived experience, as well as the value of dual attention to both physical and mental health of students in the course of prevention and resilience fostering interventions.

### Limitations

This study is cross-sectional in nature and, thus, interpretations of causality are constrained. Further research and longitudinal data are necessary to understand how mental health concerns evolve over time, as well as how risk and resilience factors affect outcomes for undergraduates as they transition through their university experiences and beyond. Additionally, although the study sample includes considerable diversity, the sample characteristics will vary from those of other universities. There is, for example, a lower proportion of African Americans and a higher proportion of Asian and immigrant or international respondents than in some other educational settings. This was not a random sample of undergraduates but does represent a range of areas of study and personal characteristics. These variations in demography and academic interests should not, however, serve to alter the nature of linear trends underlying findings reported here, arguing for broad-based generalizability. At the same time, our findings offer insights relevant to the development of effective prevention and resilience-building supports that may be applied within college settings. Such

guidance is also germane to other young adult serving providers such as primary care professionals, family and mental health services, and other transitional age support services.

## Conclusions

This study responds to the growing concerns on college campuses regarding student stress and mental health. Findings underscore the value of attending to more integrated understandings of the stress and adversities that the student's encounter—signaling the importance of exposure reduction or prevention—alongside the potential of mutable resilience resources to mitigate mental health erosion and foster thriving. Recognizing growing outreach and diversification aims, our results urge attention to marginalizing factors in the students' profiles and backgrounds—including the potential for tailoring of services to more complex identities and needs. Campus administrators are reporting challenges of campus support and mental health services to meet contemporary needs within shrinking budgets and rapidly evolving social contexts. At the same time, advancing student mental health is one of the cornerstones for student well-being and a successful academic experience, wherein colleges and universities can play pivotal roles.

## Conflict of interest disclosure

The authors have no conflicts of interest to report. The authors confirm that the research presented in this article met the ethical guidelines, including adherence to the legal requirements, of the United States of America and received approval from the University of Washington IRB.

## Funding

This research was supported in part by the following grants: NSF EDA-2009977, CHS-2016365 CHS-1941537, Samsung, and a pilot research grant from the University of Washington Population Health Initiative.

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