

Exploring the relationship between wellness behaviors and burnout amongst university faculty and staff

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Abstract Higher education has recently experienced unprecedented faculty exodus, largely due to burnout. Burnout is associated with poor health outcomes. Active lifestyles contribute to health and reduced burnout, but research investigating wellness behaviors and burnout amongst university faculty and staff is lacking. The purpose of this study was to assess wellness behaviors including physical activity, nutrition and sleep in university faculty and staff and their associations with burnout. This mixed methods study included two phases. First phase was a quantitative survey assessing burnout total burnout, self-reported physical activity, nutrition and sleep behaviors. Phase II was a qualitative open-ended questionnaire assessing perceptions of workplace factors associated with burnout and campus resources to support wellness. A total of 294 faculty and staff participated in phase I. The majority of respondents identified as female ($n=158$, 53.7%) and in faculty roles, $n=150$ (53.6%). The majority of participants, $n=169$ (57.5%) reported moderate or high levels of burnout. The majority of participants were inactive or minimally active, $n=174$ (59.2%). There was a statistically significant, positive, correlation between physical activity status and personal burnout, $r(252)=0.21$, $p<0.001$. Of 48 participants in phase II, access to wellness resources and organizational factors emerged as factors associated with burnout. Participants expressed desires for improved access to exercise and wellness resources and described disparities between student resources and those for faculty. This research might be used to inform practice through the development of support programs, wellness initiatives, or facilities for physical activity on campus for faculty and staff.

Keywords: Physical activity, sleep, nutrition, wellness, burnout, higher education

Burnout in the workplace is a growing issue which poses a critical health risk to employees. Workplace burnout is understood to be both a physical and mental condition that arises due to increased work demands, emotional exhaustion, and/or minimal social support (Chen et al., 2020). Workplace burnout encompasses three dimensions including a) emotional exhaustion, b) cynicism and emotional detachment from work and clients, and c) reduced personal efficacy and accomplishments (Maslach et al., 2001; Maslach & Leiter, 2016). It is well established that worksite and organizational factors influence individual level health outcomes (Kilanowski, 2017), and worksite factors can directly result in burnout. Burnout and stress have been identified as significant contributors to poor physical and psychological health (McGrath et al., 2003). In fact, research indicates that burnout itself may be considered a form of depression, and it is associated with increased alcohol consumption and sleep disturbances (Schonfeld & Bianchi, 2016). Workplace burnout has also been associated with physical health impacts such as increased cardiovascular diseases, musculoskeletal pain, gastrointestinal and respiratory illnesses (Salvagioni et al., 2017). In addition to physical and psychological health impacts, burnout contributes to poor occupational outcomes such as job dissatisfaction, absenteeism and turnover (Ingersoll et al., 2014; Salvagioni et al., 2017).

One field currently experiencing extraordinary levels of burnout is Higher Education. Faculty and staff burnout has recently become a pressing issue and universities have seen unprecedented levels of faculty exodus (Flaherty, 2022). As per the 2022 Survey of College and University Chief Academic Officers conducted by *Inside Higher Ed*, provosts reported that the Great Resignation has significantly impacted staff and faculty jobs, with a 79% increase in faculty members departing at elevated rates compared to historical trends and even more staff departure (Flaherty, 2022; 2022 Survey of College and University Chief Academic Officers, n.d.) Reasons contributing to this exodus include burnout, underappreciation, low salaries, salary stagnation, physical and mental health concerns, unhealthy workplace environments, unsustainable workloads, curriculum incursions, institutional responses to the COVID-19 pandemic, and opportunity or growth at other institutions (Flaherty, 2022). In spite of the numerous reasons for leaving the field, faculty described the hardest part of stepping down from their position was leaving the students (Flaherty, 2022). This suggests that it is not the teaching itself that is causing them to leave but rather institutional and contextual burdens.

Wellness behaviors, such as physical activity, healthy eating, sufficient sleep and other stress management practices may serve as potential mechanisms for mitigating the impacts of workplace burnout (Green & Kinchen, 2021; Lee et al., 2008; Naczenski et al., 2017; Penttinen et al., 2021; Söderström et al., 2012). Physical activity, which is a broad term defined as “any bodily movement produced by skeletal muscles that results in energy expenditure” has been shown to be effective in reducing burnout and

improving well-being (Caspersen et al., 1985; Naczenski et al., 2017). Physical activity can include movement ranging anywhere from gardening, housework, and walking, to more specific planned forms of exercise such as swimming, lifting weights, and more (Caspersen et al., 1985). While evidence suggests that physical activity offers both psychological and physiological protections against stress and burnout, further research on this relationship is needed to fully understand this mechanism (Lee et al., 2008; Mandolesi et al., 2018; Miles, 2007; Warburton, 2006). Healthy eating is another wellness behavior and recent research has indicated that eating a nutritious diet consisting of foods such as fat free milk, nuts and seeds, legumes, fresh fruits and vegetables, fish, and whole grains, may be protective against depression and burnout. Similar to physical activity, the mechanism behind this relationship warrants further exploration (Penttinen et al., 2021). Additionally, sleep, another wellness behavior, is a critical component in aiding individuals’ capacity to manage daily emotional stress (Vandekerckhove et al., 2018). Research has recently shown that sleep and emotion have a bidirectional relationship, meaning that changes in emotional states can affect sleep quality and vice versa. In order to restore daily functioning, it is crucial for people to get enough quality sleep because both the quality and amount of sleep affect well-being (Vandekerckhove et al., 2018). The United States Centers for Disease Control and Prevention recommends that adults ages 18-60 get 7 or more hours of sleep per night, adults ages 61-64 get 7-9 hours, and adults ages 65 and older get 7-8 hours of sleep (Centers for Disease Control and Prevention, 2022). Deprivation of sleep can cause someone to be more sensitive to stressful stimuli. In contrary, healthy sleep promotes functional brain activity, repairs adaptive processing, and enhances one’s ability to manage emotions, therefore improving their well-being (Vandekerckhove et al., 2018). In addition to these wellness behaviors, there are a number of other practices that have been linked to stress management and a reduction in burnout including meditation, spending time in nature, and mindfulness and breathing exercises, amongst others (Goodman & Schorling, 2012; Green & Kinchen, 2021; Kulchar & Haddad, 2022; Van Den Berg & Beute, 2021).

Given the high levels of faculty and staff burnout, and the known health impacts of burnout, it warrants exploration into the relationship between faculty burnout and engagement in wellness behaviors. There have been a multitude of studies focused on other populations at universities, but these are mostly centered on students and how COVID-19 affected their rates of anxiety, depression, stress, and overall well-being during and following the pandemic. However, the body of evidence investigating faculty and staff burnout, perceived stress, and well-being following the pandemic is still limited in spite of the important health and career implications. Therefore, the purpose of the study was to assess the level of perceived burnout among university faculty and staff and explore the

relationship between faculty and staff wellness behaviors and their perceived burnout.

Methods

This was a mixed methods cross sectional study. Faculty and staff at a southeastern liberal arts primarily undergraduate U.S. public university were invited for participation in a quantitative survey study assessing their burnout and wellness behaviors. Participants who indicated interest were contacted with a follow up survey inquiring further about their perceptions regarding workplace burnout and workplace wellness resources.

A comprehensive list of all eligible faculty and staff members at the university was constructed and their email contact information was included. Faculty and staff met inclusion criteria for the study if they were current employees of the university, were full time or part time, temporary or regular employees in order to include adjunct faculty perspectives and their role required regular, at least weekly, student interaction, and were not otherwise enrolled as full time students. Eligible faculty and staff received an email describing the purpose of the study and an invitation for participation in an electronic survey. The email contained the link to the survey. The survey link first directed them to an online consent form that had to be completed to access the rest of the survey. The survey was estimated to take between 10-15 minutes of the participants' time. The study protocol was reviewed and approved by the university's Institutional Review Board for ethical research with human subjects' considerations, protocol number #2023-05-005.

Quantitative data collection

The Qualtrics based survey included a total of 42 items and drew from three previously tested and validated instruments including the full 19 items from the Copenhagen Burnout Inventory to assess job burnout, the seven items included the IPAQ (International Physical Activity Questionnaire) short form to assess self-reported physical activity, five items from the ACHA (American College Health Assessment Survey) to gauge specific nutrition and sleeping behaviors, one open-ended question for participants to leave comments or concerns, and nine demographic items. At the end of the survey there was a question asking if the participants would be interested in participating in a future study inquiring further about their perceptions of workplace burnout and workplace wellness resources. Participants who responded "yes" were directed to a separate webpage where they could leave their contact information to protect the anonymity of their responses to this survey.

The Copenhagen Burnout Inventory (CBI) measures three domains of burnout: (1) personal burnout which includes 6 items; (2) work-related burnout which includes 7 items; (3) student-related burnout which includes 6 items (Kristensen et al., 2005). There are 19 questions with answers on a 5-point Likert scale ranging from 0 (never or almost never), to 4 (always), with higher scores indicating

higher burnout. Full information on scoring has been reported previously, total scoring ranges from 0 to 100 for each of the subscales and cut points for categories of burnout have been established with 0-49 indicating minimal burnout, 50-74 indicating moderate burnout, 75-99 indicating high burnout and 100 indicating extreme burnout (Barton et al., 2022; Kristensen et al., 2005).

The IPAQ short form, a widely used internationally previously tested and validated instrument, is a seven-item questionnaire that uses self-report to assess average daily sitting time and time engaged in various intensities of physical activity over the past seven days (Craig et al., 2003). Self-reported physical activity from the questionnaire can be converted into participants total weekly metabolic equivalent task (MET)- minutes. All seven items from IPAQ are included in the survey.

Five items from the American College Health Association- National Faculty and Staff Health Assessment assessing perceived overall health and wellness, sleeping habits and dietary behaviors such as daily consumption of fruits, vegetables and sugar sweetened beverages were included as well (American College Health Association, 2024).

Qualitative data collection

The second phase of the survey was a qualitative survey study using a series of open-ended written response questions. Participants in the quantitative survey who indicated interest in a follow up interview were contacted for participation.

This survey included nine open-ended written response items. These items were designed using an iterative process after consulting the literature and building on the findings from the quantitative survey data. There were four questions regarding wellness, one question about resources to help manage stress, and four questions regarding burnout. Participants could have chosen to end the interview at any time. The survey was estimated to take a minimum of 5 minutes but could have taken longer depending on the length of their responses to the open-ended items.

Quantitative data analysis

The quantitative data from Qualtrics was imported into SPSS for analysis. Responses on the IPAQ items were converted into total weekly MET (metabolic equivalent) minutes. Scores on the Copenhagen Burnout Inventory were computed utilizing previously established methods into a continuous variable yielding an average burnout score for the total scale and each of the three subscales (Barton et al., 2022). Descriptive statistics were used to assess population demographic characteristics, as well as wellness behavior engagement and total burnout. Additionally, correlation coefficients were used to assess relationship between burnout and wellness behaviors.

Qualitative data analysis

To avoid bias, the two researchers independently reviewed the qualitative data. Thematic analysis, a methodology commonly used to recognize recurring patterns or themes in the data was the framework used for analysis (Clarke & Braun, 2017). Each researcher independently familiarized themselves with the data by reading through the survey responses multiple times. Then they identified initial codes in the data by highlighting and noting any words, phrases, or ideas that repeatedly occurred for each question. Then, the two researchers compared these initial codes, discussed and rectified discrepancies and finalized them into sub themes. Sub themes were mapped and grouped for similarity and final codes overarching these sub themes were identified.

Results

Quantitative Survey

Sample

A total of 920 faculty and staff were invited to participate in the study and 294 faculty and staff responded to the quantitative survey, yielding a response rate of 32%.

Respondents were predominantly white (n=239, 79.9%), heterosexual (n=206, 70.1%), female (n=158, 53.1) with a mean age of 47.25 years (SD= 11.77). Additionally, 70.1% (n=163) were married or in a domestic partnership and the majority, 55.4% (n=163), did not have dependents in their home that required their care.

Participants had accrued an average of 11.4 years of service at their current institution (SD=9.02). The majority of the sample, 62.5% (n=175) were permanent instructional faculty members, with the largest group within these faculty being associate professors (22.4% of the total sample, n=66). An additional 20.8% (n=51) of respondents were temporary instructional staff including adjuncts, visiting instructors and visiting assistant professors, and 16.7% (n=49) of respondents were staff members. Within the group of permanent instructional faculty, many served dual roles, with 51.0% (n=123) of respondents serving in an administrative role in addition to their faculty position. Complete demographic characteristics are provided in Table 1.

Table 1. Demographic characteristics of faculty and staff

Characteristic	n	Standard Deviation	%
Gender			
Female	166		56.4%
Male	118		40.1%
Non-Binary	2		0.7
Other or Prefer Not to Answer	8		2.7
Age	mean= 47.24	11.79	100
Race/Ethnicity			
White	242		82.3
Black or African American	16		5.4
Asian or Asian American	8		2.7
Hispanic or Latino	7		2.4
American Indian or Alaska Native	2		0.7
Hawaiian or Pacific Islander	1		0.3
Mixed Race	1		0.3
Other	2		0.7
Prefer Not to Answer	15		5.1
Sexual Orientation			
Bisexual	13		4.4
Gay	5		1.7
Heterosexual	254		86.4
Lesbian	1		0.3
Pansexual	1		0.3
Queer	4		1.4
Questioning	1		0.3
Other	1		0.3
Prefer Not to Answer	14		4.8
Marital Status			
Single/ Never married	51		17.3
Married or in a Domestic Partnership	207		74.1
Divorced or separated	21		7.1
Widowed	3		1.0
Other	1		0.3
Dependents that Regularly Require their Care			
Yes	122		41.5
No	172		58.5

Current Faculty/Staff Position		
Adjunct	44	14.9
Visiting Instructor	5	1.7
Instructor	15	5.1
Senior Instructor	12	4.1
Visiting Assistant Professor	4	1.4
Assistant Professor	30	10.2
Associate Professor	70	23.8
Professor	58	19.7
Staff	51	17.3
Other	5	1.7
Years of Service at the Institution	mean =11.35	9.0
Serving in an Administrative Role		100
Yes	123	41.8
No	171	58.2

Wellness behaviors

The majority of respondents, 86.6% (n=239) considered themselves to be in good to excellent health. Male faculty members overall rated their health better than female faculty members, with 67.6% (n=75) rating their health as excellent or very good, whereas only 48.1% of female respondents, and only 33.3% (n=8) of those neither identifying as either female or male, rating their health as excellent or very good. Regarding dietary behaviors, 70.4% (n=190) drank 1 or no sugar sweetened beverages per day on average. However, 75.9% n=208 and 55.6% n=153 did not consume the recommended number of fruits and vegetables, respectively, per day. Additionally, 67.2% n=185, were sleeping 7 or more hours per night on average, with small gender differences with 67.1% (n=104) of female faculty and staff reporting sleeping 7 or more hours per night, while 69.4% (n=78) of male faculty and staff reporting sleeping 7 hours or more, though this difference was not statistically significant.

The majority of respondents, 69.0% (n=202) mentioned some type of physical activity. Of the faculty and staff, 41.0% (n=120) were considered highly active, while 28.0% (n=82) were minimally active. However, 31.0% (n=92) of respondents were inactive. There was a statistically significant difference in total minutes of weekly physical activity between male faculty and staff and female faculty and staff, with male faculty engaging in more minutes of physical activity, $M = 642.50$, 95% CI [89.23, 1195.76], $t(2.29) = 2.365$, $p = .012$.

Burnout

Just under a third of the sample (n=85, 28.9%) experienced moderate to high total levels of burnout. Highest levels of burnout were reported within the work subscale, with 43.6% (n=128) of respondents experiencing moderate to high levels of burnout. This was followed by personal burnout, with 28.2% (n=83) of faculty and staff reporting moderate to extreme personal burnout and lastly student burnout. With 22.8% (n=67) of respondents experiencing moderate to extreme burnout. Total burnout was higher for female faculty and staff ($M = 41.44$, $SD = 16.77$) than male faculty and staff ($M = 39.28$, $SD = 18.45$), although this difference was not statistically significant.

While total burnout was not statistically significantly associated with faculty or staff role (Assistant Professor versus Professor versus Staff, etc.), $F(9,270)=1.757$, $p=0.077$, there was a statistically significant, small positive correlation between years of employment at the university and total burnout, $r(273) = .221$, $p < .001$. Additionally, there was a statistically significant difference in burnout between employees with administrative roles and those without, with those serving in administrative roles reporting higher levels of burnout, $M = 4.06$, 95% CI [-0.08, 8.19], $t(270) = 1.933$, $p = .027$.

Burnout and Wellness Behaviors

To examine the relationship between physical activity and burnout, a Pearson's correlation was run between two continuous variables, total weekly minutes of physical activity and total burnout. There was a statistically significant, small positive correlation between total weekly physical activity and total burnout, $r(252)=0.21$, $p < .001$. To examine gender differences in burnout and physical activity, a Pearson's correlation was run between total weekly minutes of physical activity and total burnout, there was not a statistically significant correlation for male faculty and staff, $r(112)=0.138$, $p=.178$, or female faculty and staff, $r(158)=0.029$, $p=.738$, however for faculty and staff that did not identify as either male or female, there was a strong positive correlation between physical activity and burnout, $r(24)=0.908$, $p < .001$.

Looking at the relationship between sleep and burnout, a point-biserial correlation was run between participant's average amount of sleep and total burnout score. Data are mean $\pm$ standard deviation, unless otherwise stated. Preliminary analyses showed there were (a) no outliers, as assessed by boxplot; (b) engagement score was normally distributed, as assessed by Shapiro-Wilk's test ($p > .05$); and (c) there was homogeneity of variances, as assessed by Levene's test for equality of variances. There was a statistically significant correlation between sleep and burnout, $r_{pb}(275) = -.178$, $p = .003$, with individuals receiving less than the recommended amount of sleep reporting higher levels of burnout, $M = 45.14$ ($SD = 17.7$) vs. $M = 38.65$ ($SD = 16.56$).

Regarding dietary behaviors, a Pearson's correlation was run between daily sugar sweetened beverage consumption and total burnout and there was a small positive correlation between number of sugar sweetened beverages consumed daily and total burnout $r(270) = .16$, $p=0.009$. A spearman's correlation was run between daily fruit and vegetable consumption and burnout finding no significant associations.

Qualitative Survey

At the conclusion of the quantitative survey, 126 indicated interest in participation in a follow up qualitative questionnaire. All were contacted for participation and a total of 48 faculty and staff responded to the qualitative survey, yielding a response rate of 38%. Preferred physical

activities included exercising, meditating, being in nature, walking, running, yoga, engaging in water sports, lifting weights, biking, and skateboarding.

Themes and Subthemes

Faculty were asked to describe factors they believed were related to burnout, both contributing and preventative factors, in the workplace. Two major themes emerged which included organizational factors related to burnout and wellness factors related to burnout. Four subthemes were identified within the organizational factors and two subthemes within the wellness factors. See Table 2 for all primary themes and subthemes emerged based on factors faculty and staff felt were related to burnout.

Table 2. Faculty and staff perceptions of factors related to burnout

Themes	Subthemes (<i>frequency of mention</i>)
Organizational Factors	<i>Compensation and benefits (n=17)</i>
	<i>Social work environment (n=18)</i>
	<i>Physical work environment (n=12)</i>
	<i>Work-life balance (n=17)</i>
Wellness Factors	<i>Availability and access to clinical healthcare services (n=8)</i>
	<i>Availability and access to wellness resources (n=18)</i>

Availability and access to clinical health care services, mentioned eight times, was one of two subthemes within the wellness factors contributing to faculty burnout. Overall, when participants spoke about current healthcare available to faculty and staff, their comments expressed desires for improvements to these offerings. Participants comments helped to clarify how shortcomings in these services were relevant to current levels of burnout. Many criticisms regarding access to these services addressed issues pertaining to high cost and difficulty identifying what is available.

One participant summed up the situation by saying,

"The state health and dental plans are OKAY, but not great. It feels like a battle just to get access to preventative healthcare without paying a lot. I know there are emotional/psychological programs available to faculty and staff, but I'm too busy to look into them and haven't felt a keen need for them. I do wish there was more ready access to general counseling to manage stress, anxiety, etc. and that it was covered by our healthcare plan."

Another participant described the discrepancy between university efforts to provide healthcare resources for faculty and staff and resources for students,

"Medically, (our institution) is lower mediocre in terms of health insurance options. We don't have adequate resources for our mental health care, but we are inundated with concern about students' mental health"

Given that many participants were not full time or permanent employees, there was also discussion of a complete lack of resources. One participant stated,

"As an adjunct, there is nothing I can say to this. There is no availability, so quality is zero."

In addition to issues related to lack of clinical health care resources available, the lack of wellness resources available to faculty and staff was also frequently discussed, mentioned 18 times across the 48 participants. Another participant summarized the status of campus resources as,

"The University lacks fundamental resources to promote faculty and staff wellness. The campus is physically dangerous and under maintained. Buildings represent an environmental hazard. Transportation methods - whether on foot, by car, or otherwise - are physically dangerous, uncontrolled, and unmaintained. Faculty and staff do not have access to health services on campus - as almost all college campuses provide. Exercise facilities.... are unacceptable and exposed to pedestrian traffic.... Faculty and staff needs are largely ignored and rarely, if ever, surveyed"

Similar to discrepancies in healthcare resources for students and faculty, discrepancies in wellness resources were identified,

“Wellness programming for students has improved enormously in recent years; parallel programming for staff has not. For instance, students have access to multiple sources of confidential counseling for mental health; faculty and staff have a company whose confidentiality no one would be likely to trust. Our insurance is mediocre except for prescriptions, where it is abysmal.”

Given that faculty and staff attributed wellness and campus resources to support wellness as factors influencing burnout, a follow up question asked participants about their perceptions regarding existing campus resources to support faculty and staff wellness. Within these responses, four major themes emerged: lack of awareness of any resources, negative perceptions of existing resources, positive perceptions and specific desires for resources.

Lack of awareness of any resources on campus was a common theme that emerged. One participant summed it up with the following, *Anecdotally, it seems sometimes that not all employees are aware of the resources that are available to them. So perhaps continuing to improve communication about what resources are available.”*

Similarly, another participant stated, *“I’m actually not too sure about what they offer. I know I’ve seen emails but for some reason I haven’t really looked into it. Do we get discounts at gyms?”*

For those who were familiar with campus resources, several participants had positive perceptions of their experiences with these resources, while also expressing desire for some improvements.

“I think there are some good resources - like insurance, fitness opportunities, programming, some counseling, etc. However, I think there could be more resources for emotional and physical health care (i.e. more access to counseling, nutrition support, fitness, etc.) I think there could be more spaces for disconnecting and reflection...I also think we need more resources to empower us to figure out how to create the wellness model that works best for us, individually, and then to have colleagues who support what we need.”

“I think there are some great resources available like (Campus Fitness Class) and (Online Counseling Service), along with the programs that are available through health insurance. I would love to see compensation improve for some positions and more support for parents with young children (like inexpensive on-campus or close-to-campus childcare). I’d also love to see more opportunities for something like a Koru meditation class for faculty/staff - I did that a few summers ago with someone from the Counseling Center, and it was really helpful.”

Some participants simply expressed desire for additional resources without commenting either positively or negatively on existing resources.

“To exercise prior to or during the workday we need clean, updated, and well-maintained faculty/staff locker rooms with showers”

Finally, others had attempted to or previously utilized campus wellness resources and had negative overall impressions, particularly in comparison to the resources available to students.

“Campus wellness resources are not great. The emphasis is on students (which is necessary) but there’s little follow up for the folks who are expected to support those students. It’s interdependent - one cannot be well without the wellness of the other.”

“I would love to see the (Campus) gym outfitted for faculty. I go to the (Alternative Campus) Fitness Center and it is packed with students who sit on weight machines reading their phones or who are using the only unbroken treadmills.”

Discussion

The primary findings of the study were that nearly a third of the sample reported moderate to high burnout and work-related burnout accounted for the highest levels, as more than forty percent of the sample reported moderate to high levels on this subscale. This is unsurprising given the results of the 2022 Inside Higher Ed survey indicating with higher education leadership largely attributing burnout and other related factors to the high level of exodus from academia (Flaherty, 2022; 2022 Survey of College and University Chief Academic Officers, n.d.), with female faculty and staff, those serving in administrative roles and those working at the institution for a longer period of time reporting higher levels of burnout, which aligns with previous findings regarding risk factors for faculty burnout (El-Ibiary et al., 2017). The lowest levels of burnout were on the student-related scale. This aligns with previous research from Flaherty which indicated that stepping away from the students is one of the more difficult aspects of faculty choosing to leave higher education.

An unexpected finding from the study was that increased physical activity, as assessed by total weekly MET-minutes, was significantly positively associated with increased total burnout in the sample. Upon further examination, it was found this relationship was only significant for non-binary faculty and staff and the broader field of literature on physical activity and health behaviors in non-binary adults is limited, with only eight studies explicitly including non-binary populations, and findings describing prevalence of physical activity and associations with chronic disease risk including cardiovascular disease, diabetes, bone health, kidney disease and mental health conditions not related to burnout (Alzahrani et al., 2019; Downing & Przedworski, 2018; Schweitzer et al., 2023; Smalley et al., 2016; Victorina Aguilar Vilas et al., 2014). Further research is warranted in this area for this population of university faculty and staff. Although not statistically significant, there was a still a positive association between burnout and physical activity for both male and female

faculty and staff, and a significant association for the entire study population. Although the positive relationship between physical activity and burnout was a relatively weak association, it does not align with the broader literature regarding the relationship between physical activity and workplace burnout, which typically indicates that physical activity is protective factor for managing stress and burnout. For example, Howie and colleagues found in their study of medical school faculty, staff and students that leisure time physical activity was protective against burnout (Howie et al., 2022). Naczenski and colleagues conducted a systematic review of studies assessing the relationship between physical activity and burnout (Naczenski et al., 2017). The review included 10 longitudinal and intervention studies, with both types of studies providing evidence of a negative relationship between physical activity and exhaustion, one component of burnout, though the quality of the included studies was low indicating a need for further evidence. While most of this research found some protective effect of physical activity for dimensions of burnout, a few studies did not find evidence of a significant relationship between the frequency of exercise and burnout (Eckstein et al., 2022; Reed et al., 2020). One caveat of these findings was that the review did not assess the relationship between total burnout and physical activity, as our study did, rather just the exhaustion component. Other burnout inventories include exhaustion as a subscale, the Copenhagen Burnout Inventory does not, so it wasn't possible in this study to assess the relationship between physical activity and exhaustion (Kristensen et al., 2005).

In another review study focusing solely on physical activity and burnout in healthcare workers, half of the included studies that utilized bivariate analysis found that low physical activity was associated with high levels of burnout, although several included studies found no relationship between physical activity and burnout (Mincarone et al., 2024). Similarly, none of the included studies found a positive relationship between physical activity levels and burnout, indicating the need to further explore these findings in our sample. Finally, one study assessing burnout and physical activity in higher education faculty in Iran similarly found physical activity to be protective against burnout (Mincarone et al., 2024). One potential explanation of the contradictory findings of this study is that physical activity is regularly recommended in medical literature as a means for managing stress (*Exercise and Stress*, n.d.), and in this educated study sample, physical activity and wellness behaviors were identified as means of managing or preventing burnout in the qualitative findings, so perhaps the faculty and staff who are experiencing higher levels of burnout are utilizing physical activity as a means to manage it.

As expected, adequate sleep was associated with lower burnout in our study, as insufficient sleep has been identified as a predictor of burnout including in university faculty populations (Howie et al., 2022; Söderström et al., 2012). High levels of burnout can also interfere with quality of sleep indicating the importance of this wellness

behavior in the management of burnout (Leone et al., 2008).

The primary findings of the qualitative portion of our study found that faculty identified having access to quality health and wellness resources as an important strategy for managing workplace burnout. When asked about their perceptions of these existing resources on campus, a few had positive experiences, but many had specific desires for improvements and noted the disparity in resources for students versus resources for faculty and staff. These findings align with the broader literature, which has established that workplace resources can help moderate burnout and promote wellness (Gabriel & Aguinis, 2022). Amongst evidence-based recommendations for preventing and combatting employee burnout are wellness offerings at the worksite such as mindfulness and meditation classes (Gabriel & Aguinis, 2022). Wellness behaviors were frequently identified as a preferred coping mechanism for faculty and staff in this study where burnout was prevalent, but it would be of interest for future research to explore what are coping mechanisms utilized by faculty and staff who report levels of burnout. Additional studies have found that it is helpful for employees to have the ability to take fitness classes and incorporate deliberate exercise into their schedule which echoes the desires of our sample (Swickert, 2020). It is unknown if the disparity between student focused and faculty/staff focused resources is part of a larger pattern across higher education, or a finding unique to this sample, warranting further research in this area.

It should be noted that there were a number of limitations with the study. First, the sample was drawn from one southeastern US public university, which likely does not represent the experiences of faculty and staff at other institutions. Additionally, the sample was predominantly white and heterosexual, and may not reflect the experiences of burnout and wellness amongst minority faculty members. Comparing the findings with other institutions or recruiting and including a more diverse sample of faculty and staff would help to increase generalizability of the findings. The study also may be subject to self-selection bias, as faculty and staff who are experiencing burnout might be more likely to have participated. Of note, the initial quantitative survey was administered over the summer when faculty were off contract, and that may have influenced daily routine patterns or perceived feelings of burnout amongst respondents. Another limitation is that this survey was cross-sectional rather than tracking perceived wellness and burnout over time. Although it would be worth investigating how different academic schools or departments differ in responses, the demographic questions did not include questions about where faculty and staff specifically work in order to protect anonymity of small departments that may only have one to two people in specific positions.

Findings from this study are important, as this research can inform practice through the development of support programs, workshops, wellness initiatives, or facilities that promote activity on campus for university faculty and staff.

Investing in active living resources to support faculty wellness may be a promising approach to minimizing higher education workplace burnout. Results from the study indicate a number of questions that warrant further exploration. Overall, there is still a very limited body of research that investigates burnout and wellness behaviors in university faculty and staff. Future research should include longitudinal and intervention-based studies assessing burnout and wellness behaviors in faculty to better understand these relationships and potentially mitigating programs and resources. Research should also compare perceived burnout and wellness behaviors at different institutions and/or across different disciplines. Finally, if universities have targeted interventions and wellness programs, future research should also evaluate the effectiveness of them.

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