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Under the sword of Damocles: Exploring the well-being of university academics during a crisis

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Prompted by the wide-spread impact of the global pandemic on the higher education sector in Australia, this study explores the wellbeing and mental health of university academics who were caught in this altering landscape. This mixed-methods study has three objectives. Firstly, the study involved the design and development of an instrument to measure the wellbeing of university teachers. Secondly, the new instrument was administered to a randomly drawn sample of university academics, in order to validate its use. Thirdly, the study sought to identify possible strategies utilized by participants during times of high pressure, conflict and stress. As an initial validation study, the project involved scale design, generating a tool which measures the wellbeing of university academics, especially during times of crisis. The measurement tool was constructed in four parts drawing on the established formula of academic workload: Teaching, Research, Service/Engagement, with Part 4 seeking out demographic variables for analysis. Findings suggested that most academics were concerned about the maintenance of their research output and teaching workloads. Maintaining responsibilities as care-givers and parents of school-going children proved challenging. Many conceded that maintaining equilibrium was complex. It is anticipated that the scale will be an effective means of quantifying academic wellbeing especially during a crisis, thereby offering a valid instrument to university leaders, when considering staff security and comfort, in the contemporary context.

KEYWORDS

wellbeing, university lecturers/teachers, workload, mental health, work pressure perception

Introduction

The global pandemic brought into sharp focus, the positions of academics located within universities. During this period, university academics around the world found themselves in an unenviable position. Reports, such as those by [Guthrie et al. \(2022\)](#) recorded the constraints experienced by university academics, through job losses and

cost-cutting. In Australia, job losses, border closures, and the loss of many international students, engendered a significant decline in enrolment figures (Carnegie et al., 2022). A report commissioned by the Australian Tertiary Education Quality and Standards Agency (TEQSA) in July 2021, noted that the structural impacts of COVID were far reaching, and placed staff at different levels of university teaching at risk. Staff working within teaching and research roles at Australian universities bore the brunt of reduced class sizes, possible termination of duties, and faced challenges as funding to the tertiary sector for research was cut considerably (Australian Government, 2021). The lives of academics, based within Australian universities, altered with sudden profundity, with their work environments becoming insecure and uncertain (Creely et al., 2021; Larkins and Marshman, 2021; Carnegie et al., 2022). However, uncertainty and insecurity in academia was not unique to the pandemic of 2020 (Petersen et al., 2012). Previous studies and reports revealed distress and worry among academics who struggled to meet prescribed benchmarks (Williams et al., 2017; Weale, 2019). However, there is a dearth of research exploring the well-being of university academics in contemporary times, despite evidence of stress, anxiety and poor mental health. The pandemic therefore may have illuminated an existing challenge that continues to compromise the wellbeing of university academics.

In the light of this, the current study adopted a multi-layered approach, intending to explore the wellbeing of academics during the COVID 19 pandemic, but also more holistically during typical working periods. Given the mental and emotional strain that most in the sector experienced (Creely et al., 2021; Carnegie et al., 2022), the research team drew on the ease of a constructed matrix, to ascertain the views of respondents regarding their levels of wellbeing. Additionally, the study sought to measure individual experiences, through an examination of levels of comfort, opening up dialog about job security, mental health and emotional wellbeing, during periods of crisis. The study utilized the platform of the global pandemic, so that respondents could reflect within the moment, but also more broadly on their experiences working at universities, during times of high stress and crisis.

Literature review

The work of university academics across all discipline areas is complex: it involves various combinations of teaching (including PhD supervision), research and writing, and service to the university, not to mention leadership and administration (Nästesjö, 2021; Tregoning, 2022). Academics are expected to be writers, teachers, collaborators, administrators, researchers, conveners, supervisors, leaders, entrepreneurs, negotiators, and counselors; there are multiple roles that range from the transactional to the transformative that are fundamental to their core work. To be successful and have impact, university academic researchers not only have to meet metrics for output and productivity but are also encouraged to apply for highly

competitive funding opportunities (Oravec, 2020; Naidoo-Chetty and du Plessis, 2021). The current neoliberal climate in universities has driven corporatization and a concomitant “drive for efficiency and productivity in teaching and research” (Kenny, 2017, p. 897). The impact of this impetus on the work of academics has been under-researched (Kenny and Fluck, 2018).

Both the decline and increase in university enrolments often place pressure on the teaching infrastructure, with these pressures taking their toll on the mental health and wellbeing of academics in these contexts (Lodewijks, 2011; Naidoo-Chetty and du Plessis, 2021). In Australia, academics face pressure through the production of high-quality research which contributes to their research outcomes (Excellence in Research for Australia), and their teaching is governed by specific standards embedded in the Australian Universities Quality Agency and now the Tertiary Education Quality and Standards Agency. University teachers therefore juggle multiple roles, constructing courses of study including unit design and development and learning outcome mapping, as part of their workload (Lodewijks, 2011). Added to this, in-house teaching evaluations and student evaluations bring additional pressure into the equation, as university teachers become responsible for motivating and engaging adult learners, in an ever-changing student landscape (Lodewijks, 2011; Naidoo-Chetty and du Plessis, 2021; Heffernan, 2022). The progressive nature of these demands is significant (Lodewijks, 2011; de la Fuente et al., 2021).

The Australian Government funded report, *The work role of academics in Australian Universities*, by McInnis (1999) confirmed the complexity and the diversity of what academics do to fulfil these multiple roles. Written over 20 years ago, it was one of the first major Australian studies to connect the multi-faceted work of academics with the resultant impact on their lives, and reflected increasing focus, internationally, on the experiences and wellbeing of academics (Lacy and Sheehan, 1997). More recently, another report corroborated these findings (Carnegie et al., 2022), implying that little had been done to address the stresses experienced within academia over the years. The intricacy of the intellectual and managerial work of academics, as directly connected to overt and covert demands and expectations, especially for measurable outcomes, can have adverse personal effects (Kenny, 2017). Duncan et al. (2015) supported previous studies in suggesting that fragmentation of the work of academics is a major source of unhappiness and directly touches the experiences of wellbeing. Alongside job stress and disruptions to work-life balance that often accompany the work of academics (Bell et al., 2012; Cannizzo and Osbaldiston, 2015), job-threats are also a major stressor, suggesting that job security is an important consideration for understanding the wellbeing issues of academics.

What is also emerging from research in the last two decades is that while work complexity, wellbeing issues and increasing demands for output are significant, the policy narratives and discourses from universities and from governments about

academics do not necessarily reflect this change (Naidoo-Chetty and du Plessis, 2021). Indeed, research by Malcolm and Zukas (2009), based on previous empirical research, concluded that the work of academics is indeed complex, messy and not easily confined to managerial 'boxes.' These researchers suggest that there is a disconnect between on-the-ground stories of academic experiences and the discourse of policymakers. This may be due, in part, to the shift to managerialism in universities which is discordant with the work of academics that is often personally driven and intrinsically motivated (Fredman and Doughney, 2012; Woelert and Yates, 2015). Increasingly, the work of academics is commodified, digitized, and evaluated largely on discrete performance indicators (Fetherston et al., 2020; Martin-Sardesai et al., 2020). It may also reflect the scenario of having increasing demands with parallel reduction in resources to support the work (Kinman et al., 2020). This suggests that institutions have not paid much attention to the needs of academics in the context of the shifts to the neoliberal western university (Kenny, 2017; Kenny and Fluck, 2018; Naidoo-Chetty and du Plessis, 2021).

Recent research by Smith and Ulus (2020) asks the question about who cares for academics and who listens to their raw emotional stories about the experiences in tertiary environments tuned to the neoliberal. This is in a context where the burnout of academics is an increasingly challenging issue internationally (Salimzadeh et al., 2021; Werner and Springer, 2021). Job burnout has root causes, effects on the person and consequences for the longevity of a career (Salimzadeh et al., 2021). Lee and Eissenstat (2018) conclude that a range of factors are at play in burnout, including job demands, work impact on home life, and role clarity. Burnout is highly related to both job content and job context but can be ameliorated by coping strategies (Salimzadeh et al., 2021; Werner and Springer, 2021). The work of academics is especially sensitive to the content of their work and the context in which it is enacted (Salimzadeh et al., 2021). One significant consequence of disillusionment and burnouts is quitting an academic career (McKenzie, 2021). McKenzie (2021) relates the idea of leaving on account of what she describes as the hidden injuries of academia, which compels attention to the role of emotional factors in the lives and productivity of academics (Newcomb, 2021; Werner and Springer, 2021).

Across the last 20 years of research about university academics, the complexity of their diverse work and roles; their changing work contexts; their wellbeing issues and emotional needs; the shift in work-life balance, and the commodification of their work within tertiary systems have come into focus (Salimzadeh et al., 2021). The advent of COVID-19 and the forced and sometimes urgent migration to online teaching and communication has further complicated the work of academics by shifting the boundaries of how and where work is done (Sahu, 2020; Creely et al., 2021; Gourlay et al., 2021; Kumar et al., 2021). Interestingly, current research seems more focused on student wellbeing rather than on that of academics (see for example Armstrong-Mensah et al., 2020; Tasso et al., 2021; Van

de Velde et al., 2021). The sudden shift to synchronous online learning and the complication of fluid working arrangements, has become a source of further issues of wellbeing for some academics (Crabtree et al., 2020; Sahu, 2020; AbuJarour et al., 2021). Recent research also suggests that women with young children have been at a significant disadvantage in terms of their output and career development (Pereira, 2021; Steinþórsdóttir et al., 2021).

There is a significant element of uncertainty about what the future will bring in the light of the pandemic, especially regarding the conducting of research, the delivery of classes and employment surety (Sahu, 2020; Tarman, 2020). The pandemic has significantly affected the financial capacities of many universities and consequently the ongoing funding available to support the work of academics (Thatcher et al., 2020). There are questions around the type of research that will be possible within the contingencies of funding and time, in the context of the need for digital online forms of engagement (data collection, writing collaboration, and so forth). With this change in work-life arrangements and modalities of educational delivery, there is still an expectation of building a career, applying for promotion, and developing international connections through collaborations and conferences (Khan and Siriwardhane, 2021). It is thus reasonable to assert that with the pandemic, the associated threat of lockdowns and the constant shifting ways of work has negative consequences for the wellbeing of academics (Pace et al., 2021) and their capacity to deliver outcomes especially in a crisis.

In the light of previous research, both prior to the global pandemic and subsequent to the pandemic, this study embedded three overarching objectives. At the outset, the study sought to quantify the wellbeing of university academics using a Likert-type scale, with a view to illuminating the pressures experienced during a crisis. Secondly, the study sought to construct a scale to measure wellbeing during a crisis, and to subject this scale to selected psychometric tests to establish trustworthiness and rigor. Thirdly, with a view to offering more constructive suggestions to academics who may be experiencing heightened anxiety as the world emerges from the global pandemic, the study zoomed in some of the strategies articulated by participants to assist others with developing mental equilibrium. As an amalgamated study, the study spotlighted the challenges experienced by academics within universities, both nationally and globally, quantifying these with a view to addressing these challenges. Consequently, the study was directed by three research questions:

1. How do academics within universities perceive their personal wellbeing, during times of conflict and crisis?
2. What are some of the demographic variables which influence these perceptions?
3. What are some of the strategies that university academics utilize in order to manage well-being and maintain equilibrium?

The significance of the study

This project intersects three concepts, the wellbeing of academics at universities, the identifications of the concerns they face and the coping mechanisms each utilizes to continue successfully through their careers. The study is motivated by a need to identify concerns around well-being while also acting as a reference point of self-reported approaches that could be shared broadly through an open publication viewed by academia at large. Formal identification of well-being issues and concerns will be valuable across higher education sectors, and will assist university boards and authority figures to hone in on those elements that contribute to productive and positive thinking, and thereby encourage and stimulate a richer and more compassionate working environment. University academics continue to produce cutting-edge research and solutions to a range of challenges faced by the contemporary world. An instrument of this nature will act as a quick reference point for those in leadership, allowing them to have easy access to staff wellbeing, quantitatively. The matrix will also contribute to the research relating to academic well-being, especially since such studies are infrequent in the higher education domain.

Conceptual framework

Academics are employed by universities on account of their capacity to educate future generations of thinkers and engage in research that attempts to address the complex issues and challenges face by society (Stensaker, 2018). In order to address these complex questions academics are required to engage in reflective, analytical and abstract thinking which involves an interplay of cognitive abilities involving crystalized and fluid intelligence, processing and memory (Evans and Stanovich, 2013; Santarnecki et al., 2021). While teaching is often governed by a schedule, research requires exploration and contemplation allowing academics time to explore, reflect and engage in a professional dialog and debate within their respective fields. As such, the workspace of an effective and productive academic is one that is an environment that is flexible and stress-free, not one that is governed by the “industrial age” of clocking in (Marquet, 2012; Muhmenthaler and Meier, 2019).

Additionally, the concerns associated with meeting prescribed benchmarks and operating in environments that are unfamiliar and different may exacerbate these stressors, rendering the academic incapable of producing well-written research or conducting fieldwork effectively. Stress in this context creates a need for self-preservation, thereby annihilating any potential for creative study, which is fundamental to the role of academics. Viewed more theoretically, Maslow’s now ubiquitous hierarchy of needs acknowledges that the needs of safety and security feature before the need to achieve and gain respect (Maslow, 1943). For

academics, this indicates that stability in their roles is crucial, before they can then expand into academic and scholarly pursuits, vital to their research output and their professional profiles.

From a neurocognitive perspective, analytical thinking and creativity, the work required in academia, draws on the prefrontal cortex area of the brain. The prefrontal cortex is an area of the brain often lauded for its potential to reason, rationalize and produce creative options; elements which are essential to research and understanding (Derakshan et al., 2009; Marquet, 2012; Muhmenthaler and Meier, 2019). Brain science research has demonstrated that the impact of larger cognitive control demands, characteristic of the use of the prefrontal cortex, can decrease the speed of task performance and increase emotional stress in high pressure work environments. When faced with circumstances that induce anxiety in workspaces, research has confirmed that cognitive performance in terms of attentional control is impaired. Therefore, when the prefrontal cortex is compromised by stress and anxiety, it is unlikely to function optimally, reducing and impairing cognitive output.

Human cognition explained by dual processing theories. Dual-process theories hold that there are two distinct processing modes available for many cognitive tasks: one (type 1) that is fast, automatic and non-conscious, and another (type 2) that is slow, controlled and conscious. Typically, cognitive biases are attributed to type 1 processes, which are held to be heuristic or associative, and logical responses to type 2 processes, which are characterized as analytic and creative, requiring higher order thinking skills. High order thinking and reasoning is core to the work of academics in advancing knowledge and creating new insights.

In his recent book *Thinking, Fast and Slow*, experimental psychologist, Daniel Kahneman, presented a model of human cognition that extended dual processing theories to two modes or ‘systems’ of thinking: System 1 and System 2. Two types of process to two separate reasoning systems, a view sometimes described as ‘the two minds hypothesis’ (Frankish, 2010). System 1 is considered the automatic, intuitive mode that is almost mechanical. System 2 on the other hand, is more analytically conscious, requiring greater degrees of effort, thought and reason. System 1 appears to fuel and feed System 2, however, academics are required to think, ruminate and rationalize. Yet, when faced with stressors, the work of academics can be confounded, as the measured thinking required within the two systems is compromised. To help better understand the impact of work stresses on academics during the pandemic the preferred theoretical approach used to interpret results of the survey was the dual-system theory posited by Kahneman (2011).

Methodology

In order to garner respondents from across Australia, the project team recruited individuals utilizing social media. Platforms such as Twitter, Instagram and LinkedIn offered both

connection and anonymity (Gelinas et al., 2017), while being convenient and less labor-intensive. The team was cautious utilizing this medium, maintaining fundamental ethical procedures, and being sensitive to potential participants who may have been experiencing layers of anxiety on account of the pandemic. When utilizing social media, the respect for privacy and the responsible handling of data, are paramount (Gelinas et al., 2017). To ensure transparency, the link to the survey connected potential respondents to a web page explaining the details of the study. Respondents were then told that their consent to participate would be implied once they commenced survey completion. None of the items were forced-choice, allowing respondents the freedom to omit responses if they chose to, this resulted in some missing scores which were addressed using the expectation maximizer in SPSS.

Scale construction

Scale development aligned with key criteria recommended regarding scale validity and construction. Four Conceptual factors informed the construction of the scale, ensuring academic rigor (Carmines and Zeller, 1991; Fink, 1995; De Vellis, 2012). In this regard, a matrix was considered the most efficient way to ascertain links between identified variables and levels of concern experienced by academics about their working contexts. The matrix structure also allows for a comparison of groups of elements, identifying the strength and direction of those variables. Matrices are usually user-friendly, and would therefore avoid being onerous to time-poor academics. For the purpose of this study, an L-shaped matrix was considered most appropriate. This matrix is the simplest and most common, comparing data in a two-dimensional manner. The matrix allows for quick and efficient visualization of data, their relationships and causes—assisting both the researcher and the participant.

Face validity

In considering the overall presentation and appearance of the scale (Fink, 1995; Zeller and Carmines, 2013), the researchers chose a matrix format to maximize responses from the largely academic audience. The lived experiences of all five co-researchers contributed significantly, shaping the pool of items for the preliminary scale. The team's expertise and experience allowed accurate wording, re-wording and editing of individual items to ensure that they comprehensively assessed a range of concerns. Following the guidelines of Boateng et al. (2018), deductive and inductive examination of the item pool at this stage enabled the construction of a preliminary scale representing a range of elements which could trigger concern among academics. Collaboratively, a pool of 20 items was generated for the preliminary scale.

Construct validity

To provide points of comparison and reference, the matrix was preceded by nine demographic questions addressing time in academia and the employing faculty. The matrix covered three aspects of academic employment: teaching (six statements), research (six statements), and engagement (five statements). Each statement was tagged by a Likert-type scale with five anchors. The matrix was preceded by the definitional statement: "In the context of this survey, 'concern' refers to the discomfort and/or anxiety an individual is likely to experience." The instrument closed with three questions seeking reflection on employment certainty in the year ahead, and how severance from a position may impact future job prospects. The instrument concluded with an open-ended question inviting respondents to share strategies they utilized to negotiate their work/life balance, and to reflect on how they coped with fear and anxiety during pandemic imposed lockdowns.

Content validity

Having constructed the preliminary scale, each of the five researchers independently appraised the instrument in its entirety, acting as the expert panel (Carmines, 1979; De Vellis, 2012). Such scrutiny allowed closer examination of whether the scale met its objectives, measuring what it essayed to measure. The team considered precision of wording, use of jargon, the purpose of the scale and how this eventuated in individual items, and its length and appropriateness. Member checks thus contributed to content validity and face validity of the entire survey.

Criterion related validity

The Social Sciences Statistical Package (SPSS) v.22 was utilized to determine overall validity, employing specific statistical procedures. Utilizing statistical measures such as communalities, an exploration of interrelationships among items and reliability checks, the research team anticipates that the final scale will be a reliable measure. Corroborating internal consistency is likely to occur following closer inspection of participant data. In analyzing individual subsets (Teaching, Research and Service), it is anticipated that participant responses will provide an accurate view of whether individual items work together, and contribute to the overall construct (De Vellis, 2012) and help refine the scale. Determined prior to further analysis, Cronbach's Alpha yielded a constructive score of .904.

Survey distribution

To garner respondents from across Australia, the project team recruited individuals utilizing social media. Convenient platforms such as Twitter, Instagram and LinkedIn offered both connection

and anonymity (Gelinis et al., 2017). The team was cautious in utilizing this medium, maintaining fundamental ethical procedures, and being sensitive to potential participants who may have been experiencing anxiety due to the pandemic. When utilizing social media, the respect for privacy and the responsible handling of data, are paramount (Gelinis et al., 2017). All members of the research team embedded links to the survey within their social media accounts in an attempt to secure a broad respondent base. To ensure transparency, the link to the survey connected potential respondents to a web page explaining the details of the study. Respondents were informed that their consent to participate would be implied once they commenced survey completion. None of the items were forced-choice, allowing respondents the freedom to omit responses if they chose to; this resulted in some missing scores which were addressed using the expectation maximizer in SPSS. In the first wave of distribution, 57 respondents completed the survey. In the second wave, following renewed calls for completion by the research team, 105 respondents completed the survey. This figure is regarded as statistically appropriate (Browne, 1995; Whitehead et al., 2016).

Descriptive statistics of participants

The majority of respondents were located at universities ($n=86$), with 19 respondents selecting to omit this question. About 50 % of respondents ($n=51$) were from the Faculty of Education, with the remaining participants being drawn from a range of other faculties, including Arts, Business, Health Sciences, and Law. Thirty respondents indicated that they were primary care-givers of school aged children, with about 20 percent of respondents choosing to omit this information. There was a spread of respondents across levels of appointment. Given the pertinence of this data to the study, the details have been captured in Table 1. The highest percentage of respondents were Level B lecturers with Associate Lecturers and Professors responding least. The majority of participants were aged 41–60 ($n=73$), with 35% of respondents ($n=35$) acknowledging that they were in academia for between 6 and 10 years.

Data analysis

The Wellbeing and Health of Academics Matrix set out to quantify the perceived emotional, psychological and physical wellbeing of academics based at universities, during a crisis. The survey was preceded by a set of demographic variables to facilitate analysis. There were three quantitative sub-scales within the matrix which aligned with the academic workload formula utilized in universities around Australia: teaching load; research and service roles. A small percentage (around 21%) of data was missing from the data set. This is normal in large data sets as participants may skip a question or choose not to answer it. In order to determine whether these responses were missing

TABLE 1 Descriptive statistics of participants.

Demographic variable associated with respondents	Number of respondents (n)	Overall percentage of respondent base
Respondents currently working in universities	99	96
Respondent Faculties:		
Education	58	55
Arts	5	4.7
Law	3	3.3
Health Sciences	10	9.9
Business	5	4.7
Information Technology	4	4.2
Other (Not Stated)	20	19
Respondents who are Primary Caregivers (School Aged Children)	30	38
Appointment Level of Respondents		
Level A (Associate Lecturer)	6	5
Level B (Lecturer)	46	44
Level C (Senior Lecturer)	34	32
Level D (Associate Professor)	12	11
Level E (Professor)	6	5
Respondent Ages		
25–30	7	5.1
31–40	18	17
41–50	32	30
51–60	33	30.1
61–70	15	14
Respondent Years in Academia		
0–5 years	15	14
6–10 years	30	29
11–15 years	18	17
16–20 years	7	5.1
More than 20 years	10	9.9

at random, an exploratory test was run using SPSS (Garson, 2015). Little's MCAR test, yielded a non-significant value of 0.524, suggesting that missing responses were randomly omitted by participants, with no pattern suggesting that a particular question was problematic in the scale. Following this exploratory test, an algorithmic rhythm, the Expectation Maximizer, was used in SPSS to replace missing values, creating a more complete data set for analysis purposes. Following this, Cronbach's alpha was used to check internal reliability, i.e., that the scale measured what it set out to measure. Ideally, the Cronbach alpha coefficient (α) of a scale should be above.7 (Nunnally, 1978; De Vellis, 2012). The Wellbeing and Health of Academics Matrix, WHAM, produced a score of.78, revealing very good internal reliability. Research Questions One and Two were condensed to facilitate ease of reading—the concerns

TABLE 2 Significant respondent scores relating to teaching online.

Dependent variable: Teaching load (Regular maintenance of the online learning platform)

Population sub group	n	Mean	Standard Deviation	Significance
Level B (Lecturer)	45	2.73	1.49	0.012*
Level C (Senior Lecturer)	34	3.79	1.30	0.014*

$p < 0.05$.

TABLE 3 Significant output relating to primary care-giving and research output.

Are you a primary caregiver of school-aged children?

		N	Mean	Std. Deviation	Sig.
This question relates to your research—Coping with research requirements that require new skills	Yes	44	2.55	1.438	0.05
	No	59	3.12	1.451	
	Total	103	2.87	1.466	
This question relates to your research—Collaborating with team members	Yes	44	2.50	1.248	0.06
	No	59	3.00	1.352	
	Total	103	2.79	1.326	

$p < 0.05$.

expressed by academics are aligned with demographic variables used in the survey. The third research question was answered qualitatively, drawing on the responses of participants to the open-ended question: “Tell us about how you negotiated your work/life balance if you experienced periods of time in lockdown. What are some of the strategies that you used to cope with your fear, concerns or anxiety during the pandemic, and the subsequent crisis in higher education?”

Teaching workload

In the first subscale relating to participant concerns regarding their teaching workloads, mean values closer to five are indicative of increased concern, while lower scores, closer to one, are suggestive of reduced concern. An examination of the analysis of variance among mean scores in this section revealed statistically significant scores in relation to regular maintenance of the online learning platform ($p < 0.05$) for Level B (Lecturers) and for Level C (Senior Lecturers). This implies that Levels B ($n = 45$, $M = 2.73$, $SD = 1.49$) and C ($n = 34$, $M = 3.79$, $SD = 1.30$) respondents were very concerned about the translation of teaching content from face-to-face into the online mode, during the COVID 19 pandemic (Table 2).

Years of experience, with respondents in the 6–10 range ($n = 29$) produced the highest mean score of 3.07 ($SD = 1.56$). Those in academia for 20+ years expressed the least concern relating to their teaching workloads ($M = 2.89$, $SD = 1.08$). Individuals who were primary care-givers to school-aged children ($n = 25$) experienced greater concern regarding their teaching commitments ($M = 3.23$, $SD = 1.12$) compared to their non-caregiver counterparts ($M = 3.08$, $SD = 1.07$). Inspection of the data in this category suggested that primary caregivers of school aged children experienced heightened concern relating to “translating content from face-to-face to online modes,” scoring means around 5 ($SD = 0.33$), indicating overwhelming concern. Given the increased response from the Faculty of Education across the data set, the results produced were somewhat skewed, yielding an overall mean of 4.1 ($SD = 1.41$). While this result does appear to suggest that academics in the Faculty of Education experience heightened concerns relating to their teaching workload, there was no immediate point of comparison as numbers from other faculties were very low. Some faculties, such as Business, scored a mean of 5, with just four participants. Similar results were evident in the Faculties of Arts, Law and Medicine. These results do imply that academics experience some strain with regard to their teaching workloads. Level A (Associate Lecturers) experienced the highest concern relating to their teaching workloads ($M = 3.39$, $SD = 1.18$), followed by Level C (Senior Lecturers), ($M = 3.27$, $SD = 0.99$). Level E (Professors) experienced the least concern regarding their teaching workloads ($M = 2.80$, $SD = 0.46$).

Academic research output

The second subscale related to participant concerns regarding their research output. Here too, mean scores closer to five are suggestive of increased concern regarding their ability to write and publish scholarly material, while scores closer to 1 suggest limited concern. There were significant differences in the mean scores between individuals who identified as primary care-givers of school-aged children ($n = 44$, $M = 2.55$, $SD = 1.43$) and those who were not, ($n = 59$, $M = 3.12$, $SD = 1.45$) with regard to “Coping with research requirements that require new skills” ($p < 0.05$). Similar significant mean scores were evident with regard to research responsibilities that required “Collaboration with team members” ($p < 0.05$), for primary caregivers of school-aged children ($n = 44$, $M = 2.50$, $SD = 1.25$), and those who identified as not being the primary care-givers of school aged children ($n = 59$, $M = 3.00$, $SD = 1.35$). Interestingly, individuals who indicated that they did not have care responsibilities of school-aged children produced lower mean scores in both categories, implying that they experienced reduced degrees of concern relating to research output (Table 3).

Statistically significant differences were also evident among mean scores relating to “Conducting research on-site using participants,” and “Coping with research requirements that require new skills,” with regard to appointment level. An inspection of the data generated through post-hoc analyses revealed that Level B

TABLE 4 Significant mean scores relating to conducting research and learning new skills.

Variable	Level of appointment	N	Mean	SD	Sig.
This question relates to your research—Conducting research on site using participants	Level B (Lecturer)	45	3.87	1.179	0.047 (in relation to Level D)
	Level C (Senior Lecturer)	34	4.00	1.044	0.025 (in relation to Level D)
This question relates to your research—Coping with research requirements that require new skills	Level B (Lecturer)	45	2.53	1.486	0.047 (in relation to Level C)
	Level C (Senior Lecturer)	34	3.44	1.260	0.047 (in relation to Level B)

$p < 0.05$.

TABLE 5 Significant mean scores of respondents with regard to research collaboration and time management.

		N	Mean	Std. Deviation	Significance
This question relates to your research. –Collaborating with team members	25–30 years	4	3.50	1.291	
	31–40 years	13	2.31	0.947	
	41–50 years	38	2.32	1.297	0.005*
	51–60 years	35	3.37	1.239	0.005*
	61–70 years	13	2.85	1.405	
	Total	103	2.79	1.326	
This question relates to your research. –Creating time and space to conduct and write up research papers, manuscripts and reports	25–30 years	4	3.75	1.258	
	31–40 years	13	3.62	1.387	
	41–50 years	38	3.39	1.516	0.024**
	51–60 years	35	4.29	0.825	0.024**
	61–70 years	13	4.46	0.877	
	Total	103	3.87	1.273	

$p < 0.005$.

(Lecturers; $n = 45$, $M = 3.87$, $SD = 1.18$) and Level C (Senior Lecturers; $n = 34$, $M = 4.00$, $SD = 1.04$) experienced reduced concern conducting research on-site using participants ($p < 0.05$), compared to Level D (Associate Professors; $n = 12$, $M = 2.50$, $SD = 1.62$). Additionally, there were statistically significant differences between the mean scores of Level B (Lecturers; $n = 45$, $M = 2.53$, $SD = 1.49$) and Level C (Senior Lecturers; $n = 34$, $M = 3.44$, $SD = 1.26$) when it came to coping with research requirements requiring new skills ($p < 0.05$), with Senior Lecturers experiencing greater concern about research requirements that required new skills compared to their Lecturer counterparts (Table 4).

Concern relating to research output was explored with regard to respondent location (state in Australia) and the faculty in which they worked. Given the increased response from the State of Victoria, and from individuals working within the Faculty of Education, these results were somewhat skewed. The research team is based in Victoria, and are all members of the Faculty of Education, answering for the preponderance of responses from these two categories. The survey was distributed using varying social media platforms. Despite this evident skewness, the data was more closely examined for patterns and commonalities, using the comparative tables generated by SPSS. Those located within Victorian universities produced a mean score of 4.01 ($SD = 1.18$), suggesting significant concern relating to research output. More specifically, this concern was

linked to “Maintaining momentum with writing up research manuscripts, papers and reports,” recording a mean of 4.00 ($SD = 1.20$). The item that followed closely was “Creating time and space to conduct and write up research papers, manuscripts and reports,” which scored a mean of 3.99 ($SD = 1.07$), overall. Likewise, “Obtaining research assistance through funding, personnel and support,” obtained a mean score of 3.97 ($SD = 1.06$), implying that there were three dominant areas of concern for Victorian respondents (Table 5).

Additionally, there were statistically significant differences ($p < 0.005$) between the mean scores obtained by respondents in the 51–60-year age group ($n = 35$, $M = 3.37$, $SD = 1.24$), compared to their counterparts in the 41–50-year age group ($n = 38$, $M = 2.32$, $SD = 1.30$), in relation to research collaborations with team members. Respondents in the 51–60-year age group experienced greater concern than their colleagues in the 41–50-year age group. Furthermore, there were significant difference ($p < 0.05$) between the same groups 51–60-year age group ($n = 35$, $M = 4.29$, $SD = 0.83$), and the 41–50-year age group ($n = 38$, $M = 3.39$, $SD = 1.52$) with regard to creating time and space to conduct and write up research papers, manuscripts and reports. Individuals in the 51–60-year age group experienced increased concern compared to respondents in the 41–50-year age group.

With regard to years in academia, there were significant mean scores relating to “Coping with research requirements that require

new skills”; “Collaborating with team members,” and “Creating time and space to conduct and write up research papers, manuscripts and reports,” among the groups. Interestingly, individuals with 11–15 years in academia expressed significant concerns regarding coping with research requirements that entailed new skills ($p < 0.05$), compared to their peers with 16–20 years of experience ($p < 0.005$). This variable also produced a statistically significant mean difference between those with 6–10 years of experience compared to others with 16–20 years of experience ($p < 0.05$), with the former group expressing greater apprehension about acquiring new skills for research purposes.

Concurrently, respondents with 16–20 years of experience ($n = 16$, $M = 1.88$, $SD = 0.89$) differed from their counterparts with 11–15 years of experience ($n = 22$, $M = 3.64$, $SD = 1.29$) regarding research collaboration with team members. Those with 11–15 years of experience faced increased concern about collaboration, while their colleagues with more than 16 years of experience appeared to manage this comfortably. Moreover, respondents with 11–15 years of experience ($n = 22$, $M = 4.27$, $SD = 0.77$) differed from their counterparts with 16–20 years of experience ($n = 16$, $M = 3.00$, $SD = 1.71$) in relation to creating time and space to conduct and write up research papers, manuscripts and reports. Individuals with 11–15 years of experience were significantly anxious, producing a mean score close to 5, while their colleagues with over 16 years in academia expressed neutral views regarding the writing up of research.

Service and engagement

Participants with primary care-giving responsibilities of school-aged children yielded statistically significant means ($p < 0.000$), when asked about their ability to meet the demands of service and engagement responsibilities in their faculties ($M = 1.11$, $SD = 0.80$). Other sub-groups produced neutral to low means without statistical significance. Respondent scores hovered around the 2.50 mean scores, suggesting neutral or ambivalent views about the ability to meet the requirements of service and engagement roles.

Strategies to maintain work/life balance

In response to an open-ended question relating to the strategies that academics used individually to maintain good mental health and equilibrium during a crisis, it was evident that many opted for a range of negotiated elements to manage fear, concern and anxiety. Physical exercise and maintaining contact with friends external to academia appeared to provide some respite. Others noted that “I use the time to complete my writing,” while yet others were grateful for “online options” to communicate with their peers. Despite “finding [myself] anxious all the time,” many sought to maintain “regular contact with friends and family using videocalls,” while “doing arts and

crafts,” offered some reprieve. Additionally, paying attention to self-care was a fundamental means of maintaining good mental health, as one response note that “closely collaborating and reflecting with my team about self-care and work-related strategies” proved to be beneficial during times of crisis.

Others chose “lots of short breaks,” suggesting that “small windows of intermission, e.g., daily walk, dinner, watching television in the evening,” proved to be beneficial, as those aspects that “required shorter commitments of focus” tended to be completed first. Others chose more reactive methods, opting for a “day-by-day, doing what is possible in the circumstances and being thankful that I still have a job/can still work.” Applying these aspects of gratitude appeared to bolster some academics, despite their noting that “finding a balance was extremely difficult.” To overcome the “merging” and “blurring” of days,” many opted for stress-reducing outdoor exercise which “helped me to feel calmer and reduce stress.” One academic observed that “meditation,” “regular conversations with people” and “setting up protected ‘me’ times away from my desk” assisted with maintaining appropriate balance during the time of crisis. Others agreed that “enforcing more and more boundaries” was helpful and finding “things that used to provide me enrichment again” became important during this period. Most agreed that “adjusting worktimes” and “reducing time away from screen” proved to be worthwhile.

Strategies such as “mindfulness to move my thinking back to the present when caught ruminating over the lack of employment certainty,” and “regular breaks each lunchtime” were helpful. While many admitted to “seeing a psychologist” and “feeling anxious,” academics were for the most part “proactive.” Having a “supportive” family and “making peace with myself on what was important to focus” became fundamental to good mental health and equilibrium. Identifying a “specific room to do my work in” in order to keep “work and home somewhat separate” was also noted as an effective strategy. “Listening to music” proved to be another common denominator listed among strategies to manage the crisis, while others reduced their “watching of the news” to “focus on things that are important to me.” “Journaling” and “writing” were mentioned by several academics, while one “joined an online singing choir and it was good to have that going on some evenings.” Most acknowledged that “on the weekends, I just turned off all devices for everyone at home to give us a mental break from our over reliance on technology. The family enjoyed this approach,” and in this context, others “only checked my emails once a day in the evening.” Most academics acknowledged that “dealing with uncertainty” was “very overwhelming,” with several suggesting that they sought “counseling” and used “medication.”

Discussion

In circumstances of uncertainty and change, universities must support the wellbeing of academics. We explored the experiences of academics navigating their increasing workloads during the

COVID pandemic. During which universities responded to the global crisis to support students but less attention seemed focused on the impact of increased workloads and expectations on academics. The survey data indicated that shifting workloads and productivity related expectations influenced stress levels and fatigue, factors that impact the type of academic work requiring high order thinking (Christensen et al., 2020) which can potentially lead to professional burnout (Lin and Huang, 2014). Findings highlight that boundaries of work-life balance no longer apply; academics are now 'living at work' and facing new challenges in their personal and professional lives. We discuss this under the core work of academics: teaching, research, and service/engagement.

Teaching

The findings show that the translation of teaching content from face-to-face to a largely online mode and working remotely has increased academic workloads. This raised concerns in particular for Level B (Lecturers) and Level C (Senior Lecturers) academics. This is unsurprising given that a large proportion of teaching is allocated to early career academics, generating increased stress and reduced coping (Salvesen and Berg, 2021). Interestingly, teaching in hybrid modes that required both face-to-face, on-site and online delivery was most concerning to academics as compared to the extended lockdowns of 2020 when most of the work occurred online. Dual processing theories provide a framework to help understand the increased load on cognitive processes when individuals are required to switch tasks frequently. Neuroimaging studies support dual-process theories (De Neys et al., 2008). Practices that involve multitasking and switching tasks can load heavily on cognitive processes such as working memory, hypothetical thinking, reasoning and social cognition (Evans, 2008). This may explain why academics reported increased levels of stress and fatigue. For example, their levels of stress and fatigue could be associated the increased demands to 'pivot' (multiple task switching).

Management of uncertainty and supportive communication enhances the perception of personal control over life events and strengthens the perception of acceptance (Mikkola, 2019). Collectively the evidence highlights important implications for university leaders and administrative managers. Specifically, supportive listening (Jones, 2011) is a critical form of emotional and informational support for stressed employees. Supportive communication is crucially important as it promotes productive work and employees' well-being, job satisfaction, and engagement in the organization. From a psychological and emotional standpoint, supportive listening and supportive communication are critical to supporting academics and helping them avoid burnout which in turn negatively impacts student learning (Madigan and Kim, 2021). The findings of the present study underline the importance of universities enabling academics to seek non-judgmental support from their supervisors and mentors.

Another explanation of academic's experiences of increasing stress and pressure experienced is the competing challenges of neoliberalism and corporatization in the tertiary sector. With the uncertainties of the pandemic that increased the complexities of academic work, the notion of work-life balance has melted away in the online workplace abyss where work and social life merge. Further work-related stress was intensified for academics who are primary caregivers of school-aged children being home schooled (Petts et al., 2021). Our findings indicate that pre-existing stressors associated with meeting prescribed benchmarks (Williams et al., 2017) have been further exacerbated. Further exploration of how academics experience these complexities and how they cope (or not) is warranted.

Research

Findings indicate that levels of stress and anxiety increased according to the level of responsibilities, for example Level B (Lecturer) academics experienced higher levels of stress Level D (Associate Professor) academics. Unsurprisingly, the findings suggest that the extended pandemic lockdowns in Victoria, Australia influenced high levels of anxiety and stress among the academics sampled. There is a significant positive relationship between length of lockdowns and reduced likelihood of coping during a pandemic (Coccia, 2021). Academics' age was an influential factor impacting stress levels and coping ability. Respondents aged 41–60 reported significant challenges to meet the expectations of university research outputs during the enforced restrictions. These included disruption to networking, levels of interactions when attending conferences, research collaborations and publishing (Byrnes et al., 2021). Restrictions placed on academics due the pandemic restrictions have prohibited most conventional forms of education, assessment, research and scientific discourse. Notably, the number of years of experience of academics seemed to influence levels of stress and coping. Stress and burnout can result in a significant loss of academic expertise of experienced academics *via* retirement (Cannizzo and Osbaldiston, 2015; McKenzie, 2021). In comparison, early/mid-career academics are focused on pursuing professional development and career promotion. It is expected that early and mid-career researchers may experience higher levels of stress that could lead to burnout during the uncertainty of a global pandemic.

Another explanation for the concerning indicators of academics' wellbeing can be understood by drawing on Kahneman's (2011) model of human cognition. Kahneman's theory highlights the intricacies of a two-system process of thinking. When academics are required to think, ruminate and rationalize they engage in System 2 type thinking. The impact of pandemic-related stress can confound the cognitive performance of the analytically conscious academic, resulting in reducing and impairing cognitive output and the ability to function optimally (Marquet, 2012; Muhmenthaler and Meier, 2019).

Service and engagement

Academic engagement refers to knowledge-related interactions of academics with external organizations. Activities include collaborative research with industry, contract research, consulting and informal ties (Perkmann et al., 2021). Our data confirms that living with repeated lockdowns and fear of pandemic spread severely limited opportunities for academics to engage. For academics, especially, those with primary care-giving responsibilities of school-aged children, increased stress levels concerning not being able to meet performance criteria over this period. Performance criteria are those indicators which suggest that an academic is executing their duties and accomplishing goals, as stipulated by their individual departments. Others seemed to take more neutral or ambivalent views on their academic work, aligning with other recent studies (Perkmann et al., 2021; Petts et al., 2021; Salvesen and Berg, 2021). Our findings suggest that anxiety, especially amongst academics still working on performance standards, is more likely during the restrictive and disruptive nature of engaging with organizations and industry during the pandemic. There needs to be greater recognition that the nature of academic work has changed due to the pandemic. It is important for universities to develop an intentional culture of care during circumstances of uncertainty and change (Corbera et al., 2020).

Conclusion

The global pandemic triggered by COVID-19 impacted on every sector and facet of life. A group that was significantly impacted were academics working within universities as their lives shifted suddenly and profoundly. This study revealed definitive consequences for these individuals with regard to mental health and well-being. Sectorial uncertainty and insecurity resulted in fear and anxiety. Interpreted within the dimensions of neuroscience, it was evident that most academics could not function or meet outcomes as expected, due to the shifting demands and expectations regarding their work. This mixed methods study revealed the specific stressors which compromised the work of academics, especially those at the mid-career stage, producing distress and worry. Additionally, academics with caring responsibilities, especially during longer periods of lockdown, experienced compromised work-life balance. The complexity and fragmentation of multiple roles, demanding and shifting workloads and expectations about productivity also brings personal consequences such as high levels of stress and fatigue.

Looking ahead, the study intimates that in circumstances of uncertainty and change, it is important that universities support the wellbeing of academics who are the drivers of knowledge advancement and change. It was evident through the study that many academics adopted a proactive approach toward their wellbeing, identifying opportunities to recharge during times of

crisis. We identify concerns that will be valuable across higher education sectors, to those in authority to foster productive and positive thinking, and encourage and stimulate a richer and more compassionate working environment. University academics continue to produce cutting-edge research and solutions to a range of challenges faced by the contemporary world. An instrument of this nature will contribute to research relating to academic wellbeing and act as a quick reference point for those in leadership, allowing them to have easy access to staff wellbeing, quantitatively.

The findings of the current study suggest a review and re-evaluation of policy in the field, especially since the challenges faced by university academics continues to hinder performance over several decades. Both the current study and previous research in the field point to the need to review workloads, create greater job security and create greater certainty regarding academic workloads. Policy should also focus on the need for variations to individually structured workloads to offer a more equitable loading to specific personnel (such as those with caring responsibilities).

Notably, the study drew responses largely from a single faculty—as a consequence, the results may be somewhat skewed. Future studies should consider purposive sampling rather than random sampling to ensure an equitable spread across faculties. Future research could also focus on the work of academics more globally to obtain an international perspective.

Data availability statement

The raw data supporting the conclusions of this article will be made available by the authors, without undue reservation.

Ethics statement

The studies involving human participants were reviewed and approved by Monash University Standing Committee on Ethics for Research with Humans. The patients/participants provided their written informed consent to participate in this study.

Author contributions

PS: overall writing and scale design. SL: editing and framework. EC and JS: literature review. VF: editing and conclusion. All authors contributed to the article and approved the submitted version.

Conflict of interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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