# COVID–19 AND EMERGENCY REMOTE LEARNING AND TEACHING: A MIXED METHODS ANALYSIS OF THE MENTAL WELL–BEING OF ACADEMICS AT A HIGHER EDUCATION INSTITUTION IN SOUTH AFRICA

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ABSTRACT

The purpose of this study was to investigate how academics at a South African higher education institution (HEI) adapted to emergency remote learning during the COVID–19 pandemic and how it affected their mental well–being. Using a concurrent mixed methods equal status design, an online survey was completed by 248 academics, which included demographic data, the 12–item General Health Questionnaire (GHQ–12) to measure mental well–being, and open–ended questions. Slightly more than one half of academics (54.1 per cent) reported losing much sleep and 81.4 per cent reported that they were under stress. Further, 28.6 per cent of participants had feelings of being unhappy or depressed and 31.1 per cent reported losing confidence. Almost one third of academics (31.9 per cent) had GHQ–12 threshold scores above 3 that is indicative of a mental health problem. A principal components analysis yielded two sub–scales: Perceived Mental Health (distress/anxiety) and Adaptive Behaviours (social function). In our study, being a woman, permanently employed, not having children, and being a lecturer were associated with lower perceived mental health; also, being permanently employed and living alone were associated with lower adaptive behaviours. In the context of ongoing online learning pedagogies and working from home, the mental well–being of academics in HEIs should be effectively supported, with differentiated/tailored/personalised approaches.

**Keywords:** Academics, COVID–19, emergency remote learning and teaching, higher education institution, mental well–being, psychological distress, mixed methods, crossover analysis

Globally, the COVID–19 pandemic has brought about a paradigm shift in the learning and teaching pedagogies of higher education institutions (HEIs). This shift has been more pronounced in HEIs with traditionally face–to–face delivery modes (Singh, Steele, and Singh 2021, 142). Despite the uptake and development of blended and hybrid learning and teaching approaches prior to 2020, face–to–face lectures remained the mainstream approach (Du Plessis et al. 2022, 7; Iwu et al. 2022,

14). It is also the cornerstone of contact education, where student–life and lecturer–student interaction form an integral part of university education, particularly for programmes with experiential or work–integrated learning components (Dean and Campbell 2020, 357).

This model was significantly disrupted by the consequent lockdown and restrictions of the COVID–19 pandemic and replaced by emergency remote learning and teaching (ERLT)—representing a rapid shift from predominantly face–to–face instruction to completely online instructional modes of delivery, such as virtual classrooms (Djajadikerta et al. 2021, 104). These sudden changes in instruction required academics in HEIs to redesign their programme content for online learning, teaching, and assessment methods. This was coupled with the introduction of working–from–home policies that meant that academics had to create a working environment in their homes to ensure the uninterrupted continuation of the academic year.

The pressure of redesigning programmes with little knowledge and experience, and expectations of quickly developing new skills and increased workloads with limited support, as well as working remotely, increased levels of stress among academics (Djajadikerta et al. 2021, 110; Idris et al. 2021, 542; Jensen, Marinoni, and van't Land 2022, 9). Even before the pandemic, it was found that job–related stress and specific work experiences (e.g., online learning) negatively impact the psychological well–being of academics by making them vulnerable to psychological distress, negative emotions, depression, and burnout (Naidoo–Chetty and du Plessis 2021, 268; Salimzadeh, Saroyan, and Hall 2017, 24).

## REVIEW OF THE RELATED LITERATURE

In this section, first, mental well–being is defined, and its relationship to both mental health and subjective emotional experiences is described. Second, findings related to the effects of working from home within the COVID–19 context are presented. This is followed by a presentation of findings from the extant literature regarding the effect of stress and anxiety associated with online learning on the mental well–being of academics. Finally, the purpose of the study, research questions, and educational significance of the study are delineated.

## MENTAL WELL–BEING

Mental well–being is the state of thriving in various areas of life, such as in relationships, at work, and socially (World Health Organisation 2022). Moreover, well–being is significantly intertwined with mental health, which indicates "a state of mental well–being that enables people to cope with

the stresses of life, realise their abilities, learn well and work well, and contribute to their community" (World Health Organisation 2022, 1). It is closely linked with subjective emotional experiences—positive emotional experiences can contribute to better mental well–being and vice versa (Salimzadeh, Saroyan, and Hall 2017, 33). Perceptions and experiences of well–being and mental health are varied and subjective; thus, it is important to incorporate qualitative experiences into examinations of well–being (Urbina–Garcia 2020, 4).

## EFFECTS OF WORKING FROM HOME

The effects of working from home on the productivity and mental well–being of academics are largely unknown. Working from home brought about unique challenges in the COVID–19 pandemic due to the changes in living arrangements and lockdown restrictions (Iwu et al. 2022, 9; Onwuegbuzie and Ojo 2021, 12; Onwuegbuzie et al. 2020, 9). In addition, working from home during the pandemic highlighted existing social inequalities. For example, several researchers reported the differential impact of COVID–19 on the work conditions of men and women (Kasymova et al. 2021, 419; Yildirim and Eslen–Ziya 2020, 243). A study conducted amongst 460 academics in France, Italy, Germany, Norway, Sweden, Turkey, the United Kingdom, and the United States, led to the finding that the gender gap regarding the impact of COVID–19 on working conditions was more marked for academics with children than for their childless counterparts, and that daily routines of women with children were significantly affected (Yildirim and Eslen–Ziya 2020, 243). In a mixed methods research study conducted in the United Sates, 48 per cent and 51 per cent of women academics indicated being mostly responsible for childcare and home–schooling, respectively; and juggling family and work life led to mental and physical exhaustion (Kasymova et al. 2021, 425). A South African study led to the identification that women academics experience various forms of academic guilt that are engendered by the conflict between employment and family as well as women's nurturing role (Walters et al. 2021, 2).

## EFFECT OF STRESS AND ANXIETY ASSOCIATED WITH ONLINE LEARNING ON THE MENTAL WELL–BEING OF ACADEMICS

The stress and anxiety of rapidly transitioning to online learning, creating workspaces at home, and the general disruptions, fears, and uncertainty of the pandemic, have impacted the mental well–being of academics (Achour et al. 2021, 4591; Idris et al. 2021, 542). A case study of the impact of anxiety and stress on the subjective well–being of 480 academics aged 25 to 60 in Muslim countries, conducted by Achour et al. (2021, 4591), revealed that more than one half of the

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participants showed medium to high levels of anxiety. These researchers reported a negative relationship between stress and well–being that was mediated by coping strategies. In the study conducted by Idris et al. (2021, 542), one half of academics (50 per cent) from health sciences programmes in Darussalam reported more screen time and 44.6 per cent computer usage stress. Regarding mental health, they reported stress in relation to workload (44.6 per cent), anxiety (37.5 per cent), loneliness (35.7 per cent), changes in sleeping patterns (35.7 per cent), and depression (21.4 per cent). Positive physical and mental health effects included more time for exercise (51.8 per cent) and a closer relationship with family (44.6 per cent) (Idris et al. 2021, 542).

Many HEIs had not fully returned to instructional methods used prior to 2020. Blended, hybrid, and online learning methodologies are integral to teaching and learning in this context and academics and students have to adapt to these approaches (Singh, Steele, and Singh 2021, 164). The information communication technology (ICT) infrastructure and the digital and mental abilities of academics, therefore, should be effectively prepared and supported (Djajadikerta et al. 2021, 110). In the aftermath of the pandemic, there might be several academics still suffering and recovering from the consequences of stress and mental health in their personal lives and careers. This needs to be acknowledged and managed.

## PURPOSE OF STUDY, RESEARCH QUESTIONS, AND EDUCATIONAL SIGNIFICANCE OF THE STUDY

The South African HEI that is the focus of this study predominantly uses face–to–face instructional methods, particularly for undergraduate programmes. This university is relatively well–resourced and one of the leading African universities. Because scant research on the response of academics to the disruption caused by COVID–19 is available in the Southern African context, we investigated how academics adapted to emergency remote learning during the COVID–19 pandemic and how it affected their mental well–being. More specifically, we addressed the following three research questions: (a) What levels of mental health problems were reported by academics; (b) How did the COVID–19 pandemic affect their mental well–being? and (c) What are the predictors of mental health problems? To address these three questions, we utilised what Plano Clark and Badiee (2010, 293) referred to as *general overarching mixed methods research questions* that drew on both qualitative and quantitative elements at the data collection, data analysis, and data interpretation phases. We hoped that findings from this study would provide valuable information about the experiences of academics during the COVID–19 pandemic and, in

particular, the extent to which and how it affected their mental health, as well as which academics were the most vulnerable in terms of mental health problems.

## METHOD

### Research Philosophy

The research philosophical stance that guided the current study was what Onwuegbuzie and Frels (2013, 14) conceptualised as *critical dialectical pluralism* (CDP). According to these authors, this stance reflects the assumption that, to some degree, social injustices permeate every society. More specifically, this study was driven by Onwuegbuzie et al.'s (2022, 1) update of CDP, namely, CDP 2.0, which has a specific focus on the following five core elements: **s**ocial justice, **i**nclusion, **d**iversity, and **e**quity, and **s**ocial responsibility—what they coined as representing the five SIDES of CDP. Using this lens, a major goal of the study was to obtain meta–inferences (i.e., inferences stemming from both the quantitative and qualitative findings being combined into a coherent whole; Tashakkori and Teddlie 1998, 101) that would increase our understanding of the experiences of academics at the HEI during the COVID–19 pandemic.

### Research Approach

The present investigation represented a fully integrated mixed methods research approach, which involves qualitative and quantitative research elements (e.g., methodologies, methods, techniques, concepts, language) being fully integrated within a single mixed methods research study at all phases of the research process (Hitchcock and Onwuegbuzie 2022, 13; Onwuegbuzie and Hitchcock 2019a, 17; 2019b, 218; 2022, 569; Onwuegbuzie et al. 2018, 668; Onwuegbuzie and Johnson 2021, 13). Fully integrated mixed methods research approaches are consistent with what Onwuegbuzie (2017, 1) and Onwuegbuzie and Hitchcock (2019a, 10) referred to as representing the 1 + 1 = 1 integration formula. Accordingly, this formula replaces the quantitative–qualitative dichotomy by continua that facilitate this full[er] integration. Importantly, research studies that represent the 1 + 1 = 1 integration formula—reflecting a meta–methods approach (i.e., involving the full[er] integration of multiple methods research approaches and mixed methods research approaches)—typically are characterised by integrated data collection, integrated data analysis, and integrated data interpretation.

## Research Design

The research design underlying this study was a fully mixed concurrent equal–status design (Leech and Onwuegbuzie 2009, 270), which involves integrating quantitative and qualitative research elements within multiple stages of the research process—in this case, the research objective, type of data and operations, type of analysis, and type of inference. Further, the quantitative and qualitative components were mixed concurrently, with both components being given approximately more weight. The quantitative and qualitative data were collected via an online survey that is described in the Instruments section.

## Participants

The target population was all academics employed at the HEI in the 2020 academic year ($N$ = 1,068). Participants were selected via convenience sampling by sending out an email with a link to the survey to all potential participants. Academics who responded were included in the sample. The recommended minimum sample size for a population of 1,000 is 278 (Krejcie and Morgan 1970, 608). Therefore, the 248 responses to the online questionnaire that we received were slightly less than this minimum sample size—representing 89.2 per cent of this sample size.

The sample, which yielded a 23.2 per cent response rate, was predominantly women (55.2 per cent, $n$ = 137), White (74.6 per cent, $n$ = 185), and residing in the Western Cape, South Africa (98.0 per cent, $n$ = 243). Most academics possessed a doctoral degree (71.8 per cent, $n$ = 178) and had access to a laptop (94.4 per cent, $n$ = 234) (see Table 1). The median age was 46.5 (Interquartile range [IQR] = 17), with a minimum age of 22 and a maximum age of 77. The participants had between 0 and 5 children (median = 2, IQR = 2) and lived with between 1 and 6 other household members (mean = 1, IQR = 2). The median years of experience was 13 (IQR = 14, Range = 0–50).

**Table 1:** Biographical Data of Categorical Variables

| Variable | Frequency (n) | Percentage ( per cent) |
|---|---|---|
| Individual | | |
| **Gender** | | |
| Male | 111 | 44.8 |
| Female | 137 | 55.2 |
| **Marital status** | | |
| Married / domestic partner | 180 | 72.6 |
| Single, never married | 50 | 20.2 |
| Divorced | 15 | 6.0 |
| Widowed | 2 | 0.8 |

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| Variable | Frequency (n) | Percentage ( per cent) |
|---|---|---|
| Separated | 1 | 0.4 |
| **Number of children** | | |
| None | 70 | 28.2 |
| 1 - 2 | 123 | 49.6 |
| More than 3 | 40 | 16.1 |
| Missing | 15 | 6.0 |
| **Ethnicity** | | |
| White | 185 | 74.6 |
| Coloured | 30 | 12.1 |
| African | 21 | 8.1 |
| Indian | 9 | 3.6 |
| Chinese | 2 | 0.8 |
| Other | 1 | 0.4 |
| **Disability** | | |
| Yes | 3 | 1.2 |
| No | 245 | 98.8 |
| Residence | | |
| **Province where residing** | | |
| Western Cape | 243 | 98.0 |
| Gauteng | 4 | 1.6 |
| Kwazulu–Natal | 1 | 0.4 |
| **Immigration status** | | |
| South African National | 224 | 90.3 |
| Permanent resident | 18 | 7.3 |
| Work permit holder | 6 | 2.4 |
| Academic profile | | |
| **Educational level** | | |
| Doctoral | 178 | 71.8 |
| Masters | 62 | 25 |
| Honours | 5 | 2.0 |
| Bachelors | 3 | 1.2 |
| **Academic position** | | |
| Lecturer | 92 | 37.1 |
| Senior lecturer | 66 | 26.6 |
| Professor | 61 | 24.6 |
| Associate professor | 29 | 11.7 |
| Faculty | | |
| **Faculty** | | |
| Economic and management sciences | 62 | 25 |
| Medicine and Health Sciences | 48 | 19.4 |
| Arts and Social Sciences | 41 | 16.5 |
| Science | 31 | 12.5 |
| Engineering | 27 | 10.9 |
| Agrisciences | 20 | 8.1 |

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| Variable | Frequency (n) | Percentage ( per cent) |
|---|---|---|
| Education | 10 | 4.0 |
| Law | 5 | 2.0 |
| Theology | 4 | 1.6 |
| **Status of employment** | | |
| Permanent | 216 | 87.1 |
| Contract | 32 | 12.9 |
| Device and WiFi access | | |
| **Devise use** | | |
| Laptop – yes | 234 | 94.4 |
| Smartphone – yes | 182 | 73.4 |
| Tablet – yes | 77 | 31 |
| Desktop – yes | 50 | 20.2 |
| Hybrid 2 in 1 device | 16 | 6.5 |
| **Internet /data access method** | | |
| Access internet – fibre/ADSL | 177 | 17.4 |
| Router/modem | 88 | 35.5 |
| Cell phone | 65 | 26.2 |
| Family member | 5 | 2.0 |

## Instruments

An online survey link was sent to participants on 11 December 2020. Three reminders were sent (January, February, and March 2021). The survey, which was closed on 21 April 2021, extracted biographical information, as indicated in Table 1. This survey also included a measure of mental well–being via the 12–item General Health Questionnaire (GHQ–12). These items were measured on a 5–point, Likert–format scale, anchored by strongly disagree = 1 and strongly agree = 5. The GHQ–12, which is an abridged version of the 60–item General Health Questionnaire (GHQ–60; Goldberg and Hillier 1979, 141), is designed to identify general mental health problems (i.e., distress, anxiety, and social function). The GHQ–12 has been validated as a mental health screening tool in several countries and various settings (Anjara et al. 2020, 4). In this study, items were coded so that a high score is indicative of better well–being (with a maximum score of 60). For the current investigation, score reliability, as measured by Cronbach's alpha, of the GHQ–12 well–being scale was .86 (95 per cent confidence interval [CI] = .83, .88).

A principal components analysis was conducted to compute eigenvalues (i.e., indicates the overall strength of the relationship between a factor and the items) for each component yielded by the GHQ–12 scores. The Kaiser–Meyer–Olkin (KMO) measure suggested good sampling adequacy, KMO = .84 (Field 2018, 1014; Hutcheson and Sofroniou 1999, 224). Further, the anti–image correlation matrix revealed that all KMO values for the items were greater than the

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acceptable limit of .5 (Field, 2018). Bartlett's test of sphericity indicated that the correlations between the items were sufficiently large ($p < .0001$) for the principal components analysis.

The eigenvalue–greater–than–one rule (i.e., K1; Kaiser 1958, 187) and the scree test (representing a plot of eigenvalues against the factors in descending order; Cattell 1966, 245; Zwick and Velicer 1982, 253; 1986, 432) (not presented) were used to determine an appropriate number of factors to retain (cf. Kieffer 1999, 75). Both methods suggested that two factors be retained. These two factors explained 55.6 per cent of the variance in mental well–being: Factor 1 (i.e., Subscale 1), which we labelled as *Perceived Mental Health*, contained 6 items related to distress and anxiety. The Cronbach's alpha associated with the Perceived Mental Health subscale was .84 (95 per cent CI = .81, .87). Factor 2 (i.e., Subscale 2), which we labelled as *Adaptive Behaviours*, also contained 6 items related to social functioning. The Cronbach's alpha associated with the Adaptive Behaviours subscale was .73 (95 per cent CI = .68, .78).

The GHQ–12 has been used as a diagnostic tool when bimodal scoring is applied. This means that items indicative of poor mental well–being can be scored as a "1" if the person agreed/strongly agreed with a negatively phrased item or disagreed/strongly disagreed with a positively phrased item (Anjara et al. 2020, 4). Threshold scores in the general population is 2 or 3 out of 12. We used a threshold of > 3 to determine the percentage of academics with poor well–being.

Further, two open–ended questions were used to capture qualitative data about the home situation of academics and personal challenges to their ability to provide online learning and teaching effectively. These aforementioned questions have been used in the South African context (Ojo and Onwuegbuzie 2020, 20), yielding what Ryle (1949, 118; 1971, viii) referred to as thick data (see also Geertz 1973, 3).

## Data Analysis

To address the three research questions, a fully integrated mixed methods analysis (i.e., fully integrated mixed analysis; Onwuegbuzie and Hitchcock 2019a, 10) was conducted. This analysis involved six phases. During the first phase, descriptive analyses (e.g., means, frequencies, proportions) were used to determine the prevalence of responses to items on the *Perceived Mental Health* and the *Adaptive Behaviours* subscales of the GHQ–12, as well as to determine the total subscale scores. The second phase involved the use of inferential analyses for the purpose of disaggregating the scores pertaining to both the *Perceived Mental Health* and the *Adaptive Behaviours subscales* by selected socio–demographic variables ( e.g., gender, age), as well as the

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GHQ–12 binary variable that was created according to the threshold of > 3.

During the third phase, constant comparison analysis (Glaser 1965, 436) was used to analyse responses to the two open–ended questions to identify themes (Leech and Onwuegbuzie 2007, 557; 2008, 587). The fourth phase involved a crossover mixed analysis being conducted wherein an analysis technique—in this case, quantitative analysis—was used to analyse data associated with the other tradition—in this case, qualitative data (Onwuegbuzie and Combs 2010, 422). Specifically, each emergent theme was quantitised (i.e., qualitative data converted into numerical data that can be analysed statistically; Miles and Huberman 1994, 253; Sandelowski, Voils, and Knafl 2009, 208; Tashakkori and Teddlie 1998, 101) by two coders such that if a participant provided a negative response relating to mental health, then a score of "1" was given to the theme for that response; contrastingly, if a participant provided a positive response relating to mental health, then a score of "2" was given to the theme for that response; otherwise, a score of "0" was given. That is, for every theme, each participant was scored with a "0" (if the response provided was not related to this theme), a "1" (i.e., negative response that represented this theme), or a "2" (i.e., positive response that represented this theme). This quantitisation yielded what Onwuegbuzie (2022, 1) coined as an intensity–based, inter–respondent matrix of themes (i.e., participant x theme matrix), which consisted only of 0s, 1s, and 2s. According to Onwuegbuzie (2022, 1), an intensity–based, inter–respondent matrix is used to assess the intensity of an event, incidence, experience, phenomenon, or the like, wherein each participant's response is coded in a trustworthy manner that is deemed to represent that person's attitude or opinion.

During the fifth phase, once this inter–respondent matrix of themes had been finalised, a form of crossover analysis was conducted: descriptive–based quantitising. Specifically, descriptive–based quantitising (Onwuegbuzie and Johnson 2021, 7) was conducted whereby descriptive analyses—specifically, frequencies and proportions—were used to determine the prevalence of each emergent theme. The sixth and final phase involved inferential–based quantitising (Onwuegbuzie and Johnson 2021, 9)—another form of crossover analysis—which was used in order to disaggregate the inter–respondent matrix by selected socio–demographic variables (e.g., gender, age). This inferential–based quantitising was undertaken via a series of Fisher's Exact Tests. A Fisher's Exact Test is used to determine whether or not there is a statistically significant relationship between two categorical variables (e.g., the relationship between gender and an emergent theme) (Fisher 1922, 89; 1954, 32). It is regarded as being a superior test to its alternative, the chi–square test, for two major reasons. First, unlike the chi–

square test, it is appropriate to use when sample sizes are small. Second, and even more importantly, the associated *p*–value is calculated exactly—as opposed to the chi–square test, which yields an approximation, although this approximation improves with accuracy as the sample size increases (Fisher 1922, 89, 1954, 32).

## ETHICAL CONSIDERATIONS

Ethical approval was obtained from the Health Research Ethics Committee at the university where the study took place. Institutional permission was obtained from the HEI and the data were managed to ensure compliance with the Protection of Personal Information Act.

## RESULTS

In this section, the quantitative data are presented first, followed by the quantitative data and the crossover analysis.

### Quantitative data

#### *Mental Well–Being*

Table 2 depicts the mean item scores of the well–being of participants. The items with the lowest mean scores (indicating poor mental well–being) were *being under stress* ($M$ = 1.85, $SD$ = 0.94) and *losing much sleep* ($M$ = 2.64, $SD$ = 1.21), respectively. Slightly more than one half of the academics (54.1 per cent) reported that they lost much sleep, and an even higher proportion (81.4 per cent) reported that they were under stress. Of note is that 28.6 per cent of participants had feelings of being unhappy or depressed and 31.1 per cent lost confidence.

**Table 2:** Well–being

| | Agreed or strongly agreed with statement *n* ( per cent) | Well–Being Mean (1=Poor; 5=Good) | *SD* |
|---|---|---|---|
| **Perceived Mental Health** | | | |
| Under stress | 202 (81.4) | 1.85 | 0.940 |
| Lost much sleep | 134 (54.1) | 2.64 | 1.206 |
| Feeling unhappy and depressed | 71 (28.6) | 3.18 | 1.195 |
| Losing confidence | 77 (31.1) | 3.23 | 1.205 |
| Thinking of self as worthless | 34 (13.8) | 3.83 | 1.179 |
| Feeling reasonably happy | 166 (66.9) | 3.63 | 0.930 |
| **Adaptive Behaviours** | | | |
| Playing a useful part | 182 (73.4) | 3.82 | 0.832 |
| Capable of making decisions | 210 (84.7) | 3.99 | 0.782 |
| Enjoy normal activities | 134 (54.1) | 3.30 | 1.049 |
| Face up to problems | 189 (76.2) | 3.84 | 0.730 |
| Able to concentrate | 150 (60.5) | 3.51 | 0.998 |
| Could not overcome difficulties | 36 (14.5) | 3.61 | 0.942 |

The mean well–being score was 40.4 (95 per cent CI = 39.5, 41.4) out of a maximum score of 60. When bimodal scoring was applied, the median was 2 (Interquartile range [IQR] = 3). The bimodal scores ranged from 0 to 10. When dichotomising the variable, 31.9 per cent ($n$ = 79) of the participants had a threshold score of > 3.

### *Factors Associated with Mental Well–Being*

As seen in Table 3, women reported statistically significantly lower levels of Perceived Mental Health ($p$ = .03) compared to men. Further, lecturers reported statistically significantly lower Perceived Mental Health compared to other academics ($p$ = .02). Also, permanent staff reported statistically significantly lower Perceived Mental Health ($p$ = .01) and Adaptive Behaviours compared to contract staff ($p$ = 0.02).

**Table 3:** Factors Associated with Mental Well–Being (GHQ–12)

| Dependent variable | Independent variable | Mean scores | *p* value | *Cohen's d [95 per cent CI]* |
|---|---|---|---|---|
| Perceived mental health (high score = better) | Women vs. men | Women = 17.7<br>Men = 19.1 | .03 | .275 [.024 to .527] |
| | Permanent vs. contract | Permanent = 18.03<br>Contract = 20.6 | .01 | –.510 [–.884 to –.136] |
| | No children vs. children | No children = 17.3<br>Children = 18.7 | .06 | .274 [–.007 to –.555] |
| | Lecturer vs. other | Lecturer = 17.3<br>Senior lecturer = 18.4<br>Associate Professor = 19.15<br>Professor = 19.3 | .02 | –.327 [–.586 to –.067] |
| Adaptive behaviours (high score = better) | Permanent vs. contract | Permanent =21.9<br>Contract = 23.4 | .02 | –.432 [–.805 to –.058] |
| | Living alone vs. household members | Living alone = 21.5<br>Household members = 22.5 | .04 | .293 [.013 to –.572] |

### *Qualitative Data*

The constant comparison analysis led to the identification of the following five themes that emerged from the responses to the open–ended questions: (a) Negative adaptive behaviours; (b) Negative perceived mental health; (c) Personal challenges; (d) Work challenges; and (e) Family challenges. The themes, codes, and frequencies are indicated in Table 4. Each of these themes is described in the following sections.

**Table 4:** Themes Extracted from the Qualitative Data (i.e., Open–Ended Responses**)**

| Theme | Codes | *n* ( per cent) |
|---|---|---|
| Negative adaptive behaviours | Isolation, miss interaction with colleagues, time management, poor work–life balance, overwhelmed, concentration, struggle to remain motivated, psychological tiredness | 61 (24.6) |
| Negative perceived mental health | Anxiety, depression, stress, distress, strain, lack of confidence | 23 (9.3) |
| Personal challenges | Health/illness, poor adaptation | 49 (19.8) |
| Work challenges | Internet connection/Wi–Fi access/affordability, loadshedding, struggling with technology, overworked, work demands, home environment not suitable office space | 119 (48.0) |
| Family challenges | Interruptions, children, loss of family members | 64 (25.8) |

### *Negative Adaptive Behaviours*

The Negative Adaptive Behaviours theme was the second most prevalent theme (see Table 4). Participants mentioned negative adaptive behaviours, such as missing interaction with students/colleagues and difficulty in keeping a work–life balance, as exemplified by the following statements:

> "Everything works, but the absence of regular personal meetings/social interactions is a huge challenge."
>
> "Do not enjoy things like social media. Feel inept/alienated by some [LMS] teaching functions – chats, forums, discussions. Does not feel "connected"; unable to read students' moods/faces etc. ear leads me to procrastinate."
>
> "Difficulty focusing, workspace is also sleeping space which negatively impacts on work–life balance and general happiness, inability to separate work from home strengthens mood swings which take me from being happy and productive to being unhappy…"
>
> "I struggled to keep work and personal life separate during the lockdown times that we had to work from home. This led to me getting burnout in October 2020."
>
> "As I am a HoD [Head of Department], the challenge was to balance all aspects related to also managing an environment, all aspects related to Covid decisions and online T andL which was intense and hectic at times and therefore limited time for focusing on other academic activities."

### *Negative Perceived Mental Health*

Although the Negative Perceived Mental Health theme was the least prevalent theme (see Table 4), there were still a significant number of academics who reported experiences that fell under this

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theme. A few academics used the phrase "mental health," as the following extract illustrates:

> "I struggle with my mental health. I have daily struggles with anxiety that sometimes makes it hard to leave the house and I struggle with depression."

However, the majority of academics who represented this theme reported Mental health issues, including incidences of anxiety, depression, stress, distress, strain, and lacking confidence—as the following accounts illustrate:

> "I have a chronic anxiety disorder."
>
> "I have high levels of anxiety, especially during these uncertain times. This influences my productivity in a profound way."
>
> "I often experience extreme stress regarding technology/connectivity. I often feel stressed having to learn new technological skills in isolation."
>
> "The disappointments and sacrifices that I've had to make this year have been emotionally draining because I haven't really had anyone to share them with and it's sometimes hard to be present and supportive of my students."

### *Personal Challenges*

The Personal Challenges theme was the fourth most prevalent theme (see Table 4). It was related to personal health or illness and poor adaptation, as follows:

> "I underwent two hip replacements, lost a beloved pet as well as my father during this time."
>
> "The biggest challenge I have faced during lockdown is the management of my type I diabetes. Since lockdown began, my sugar levels have spiralled, and I think I have a condition known as diabetes distress. Diabetes distress is closely related to depression."
>
> "…my back started giving me problems from sitting all day long. I saw the physio more times than I care to remember. My partner is involved in a difficult court case with his ex–wife…"
>
> "During the lockdown period all my roles with their respective responsibilities were called on at any time. I am not only an academic – but I am also a daughter of aging parents, a wife, a mother, a sister, an aunt…"
>
> "Marking the online exam scripts was a nightmare: it took much longer than usual and placed significant strain on myself and my family... My wife says that she barely knows me after sitting locked to my PC for two months."

### *Work Challenges*

Almost one half of the academics—representing the most prevalent theme—experienced a range of work challenges, particularly related to working from home. These academics noted issues with the work environment that resonated for them, such as lack of Internet accessibility, lack of adequate space, lack of equipment, and inadequate employer support. The following quotations represent examples of challenges associated with working from home:

> "My home situation is totally inadequate for online teaching. I have no fibre (cannot afford it!) and the mobile data is very expensive. Not once during this crisis did the [university] offer any data to the lecturers. It was just assumed that we all have access…"

> "Home is not suitable for permanent working environment. Home office is not equipped with the proper chair and desk, printer etc. Spending more time working than at the work office."

> "I manage well. However, I use my husband's laptop and have purchased a microphone at my own expense to record lectures for online delivery. I have a small house with very close neighbours so need to block out background noise."

> "Not that knowledgeable of modern technology."

> "I find that the university does not have all resource (online) to help academics be better lecturers."

### *Family Challenges*

Family challenges—the second most prevalent theme—were mostly due to interruptions by family members and childcare responsibilities, as exemplified by the following statements:

> "Being the primary caretaker for a child makes this more difficult and being at home makes it easier to get distracted by the needs of the child."

> "Constant and multiple interruptions while trying to work. Conflicting calendars with spouse (also academic) and childcare duties."

> "Interruptions related to my home life: child, domestic worker, deliveries, workers, neighbours, noise, dogs, building... extremely intrusive and very difficult to block out/ stop without causing offence or inconvenience."

Some women also reported that due to traditional female responsibilities, the performance or output of women academics cannot be compared to that of men academics, as exemplified by the following two extracts:

> "As a woman I am still in the position as primary caregiver of my two children (even though my partner lost his job) and experience every day as a testimony to the persistence of socialised patriarchy.

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I work full time and run the household."

"A different lens/ yard stick of evaluating women productivity in academia and research compared to their men counterpart".

### *Crossover Analysis Predicting Themes*

Inferential–based quantitising of the themes revealed that women academics were 2.5 times more likely to report Negative Perceived Mental Health than were men academics (see Table 5). Further, academics with no children were 3.5 times more likely to report Negative Perceived Mental Health than were academics with children. Professors were 2.14 times more likely than were non–professors to report Negative Adaptive behaviours. Similarly, non–White academics were 2.13 times more likely than were White academics to report Negative Adaptive behaviours. Also, women academics were 3.6 times more likely than were their counterparts to report Family Challenges. In addition, academics with children were 4.8 times more likely than were academics with no children to report Family Challenges. Finally, non–professors were 2.4 times more likely than were professors to report Family Challenges.

**Table 5**: Factors Associated with Mental Well–Being: Crossover Analysis of Qualitative Data

| Theme | Variable/Factor | Odds ratio and 95 per cent confidence interval | *p* value | Cramer's V |
|---|---|---|---|---|
| Negative perceived mental health | Women vs. men | 2.5 [0.94 to 6.5] | .06 | .120 |
| | No children vs. children | 3.5 [1.75 to 7.2] | .005 | .186 |
| Negative adaptive behaviours | Professor vs. remainder | 2.14 [1.69 to 2.7] | .02 | .152 |
| Work challenges | "Non–White" vs. White | 2.13 [1.9 to 2.3] | .01 | .163 |
| Family challenges | Women vs. men | 3.6 [1.9 to 6.8] | < .001 | .253 |
| | Children vs. no children | 4.8 [2.1 to 11.3] | < .001 | .256 |
| | Non–professor vs. professor | 2.4 [1.1 to 5.2] | .02 | .144 |

When exploring factors associated with a GHQ–12 threshold score of > 3, we did not find any

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biographical or work–related associations in the quantitative data. However, the themes of Negative Perceived Mental Health ($p$ = .028) (Odds ratio [OR] = 2.6; 95% CI = 1.1, 6.1; Cramer's $V$ = .14) and Work Challenges ($p$ = .002) (OR = 2.3; 95% CI = 1.3, 3.9; Cramer"s $V$ = .19) were associated with a threshold score > 3. Specifically, academics with Negative Perceived Mental Health and Work Challenges were statistically significantly more likely than were their counterparts to have poor mental well–being.

## DISCUSSION

We aimed to identify how adapting to emergency remote learning and teaching during the COVID–19 pandemic affected the mental well–being of academics at a South African HEI. To this end, we utilised an innovative methodological approach involving Onwuegbuzie and Hitchcock's (2019a, 10) 1 + 1 = 1 full(er) integration approach that facilitates integrated data collection, integrated data analysis, and integrated data interpretation.

### Levels of mental health problems

Findings from this full(er) integration approach revealed that the vast majority of academic participants (81.4%) experienced high levels of stress that affected their perceived mental health (e.g., anxiety and distress) and adaptive behaviours (social functioning). A review of research on factors impacting the psychological well–being of academics undertaken before the pandemic indicated that higher levels of stress are associated with poorer psychological well–being, higher psychological distress, and burnout (Salimzadeh, Saroyan, and Hall 2017, 31).

Although the purpose of the study was not to evaluate the score validity and score reliability of the GHQ–12 in the population of academics, it should be noted that we found good construct–related validity that approximated the original subscales and acceptable score reliability values. Further, although we did not intend to diagnose mental health disorders, we identified that almost at least one third of academics (31.9%) had scores of > 3, meaning that they might need further evaluation for possible mental health disorders (Anjara et al. 2020, 6). The median bimodal GHQ–12 score was 2 (IQR = 3), which is similar to the median score of a sample of patients attending primary health care in Indonesia (i.e., median = 2, IQR = 4). In the same study, persons with a diagnosis of mixed anxiety and depression had a median score of 3 (IQR = 3) (Anjara et al. 2020, 6). Studies in the United Kingdom and Ireland during the COVID–19 pandemic also revealed low to moderate levels of mental and emotional well–being amongst academics (Dinu et al. 2021, 2;

Shen and Slater 2021, 1). In Saudi Arabia, academics self–reported suffering from anxiety (58.1%), depression (50.2%), and insomnia (32.2%) during the lockdown (Alfawaz et al. 2021, 2). Although many HEIs have implemented mental health initiatives, it might be crucial to begin evaluating the effect of these initiatives and whether academics find these interventions meaningful and effective. The poor psychological health of academics can lead to ill health, suicidal thoughts, poor performance, and intention to leave ((Salimzadeh, Saroyan, and Hall 2017, 35)—thereby rendering this finding of a significant prevalence of academics possibly needing further evaluation for possible mental health disorders as being extremely noteworthy.

## Predictors of mental health problems in the context of the COVID–19 pandemic

The reasons for poor mental well–being amongst academics might be multifactorial. Personal, work, and family challenges impact the well–being of academics. Almost one quarter of academics (24.6%) in our study reported, via their qualitative responses, negative adaptive behaviours related to factors such as work–life balance, isolation, and reduced interaction with colleagues. Iwu et al. (2022, 11) reported that some academics at selected South African universities had negative experiences of working from home, including the inability to adapt, lack of a home office, and the inability to balance work and family, whereas others had positive experiences, such as comfort and safety (Iwu et al. 2022, 11). Key stressors for academics that might contribute to reduced mental health and well–being (and ultimately burnout) include work–life conflict, work overload, role ambiguity, lack of social support in the workplace, and a high level of interaction with students and other staff (Salimzadeh, Saroyan, and Hall 2017, 32). These are evident in the two most prevalent qualitative themes in our study, work, and family challenges. Particularly during the COVID–19 pandemic, academics were required to manage their insecurities, stressors, and emotions associated with the rapid adaptations to online environments, as well as those of their students, possibly leading to emotional exhaustion.

Dinu et al. (2021, 14) reported that, in the United Kingdom, many academics reported challenges of work–life balance, longing for social interactions with others, distractions, and increased caring responsibilities, particularly childcare. There was a trend toward stronger workplace social identity being associated with better mental well–being (Dinu et al. 2021, 14). In addition, social support from colleagues is empirically supported as a job resource that is linked to job commitment and engagement (Naidoo–Chetty and du Plessis 2021, 279). Therefore, efforts towards restoring workplace–based relationships and teams that were strained during the COVID–

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19 pandemic through activities, such as team building or team debriefing sessions, could be beneficial to the effective functioning of HEIs.

Almost one half of the academic participants (48%) indicated that they had work–related challenges, particularly concerning data, technological, and technical skills. These challenges could be linked to feelings of inadequacy and an inability to perform effectively, thereby further impacting levels of stress experienced (Penado Abilleira et al. 2021, 9). Therefore, upskilling programmes are needed further to develop skills in online and technology supported environments and to reduce the stress associated with technology, particularly for online teaching and learning (Penado Abilleira et al. 2021, 9). Again, although just–in–time training was provided rather than evaluating these programmes, it might be more important to provide continued academic development to identify skills gaps and to build on the skills acquired during the period of emergency remote teaching.

Based on the qualitative responses, non–White academics were more likely to experience work–related challenges, further highlighting the need to personalise support. Many participants in our study mentioned inadequate home workspaces and incurring costs to upgrade their home working environments. Similarly, a U.K. study revealed that, although most academics had adequate work facilities at home, they incurred additional costs for Internet upgrades or equipment (Dinu et al. 2021, 13). As such, HEIs should review work–from–home policies and take steps to ensure that academics have adequate equipment, infrastructure, and support in case they are required to work from home in the future (Iwu et al. 2022, 14). This might be particularly important in low– and middle–income countries for which we currently have little data on the experiences of academics during the COVID–19 lockdown.

In our study, being a woman, being permanently employed, not having children and being a lecturer were associated with lower levels of Perceived Mental Health. Further, being permanently employed and living alone were associated with lower levels of Adaptive Behaviours.

The qualitative and quantitative data confirmed that women are more at risk for negative Perceived Mental Health. The challenges that women academics faced during the COVID–19 pandemic in the workplace have been widely documented. Women are particularly prone to increased work–life conflict due to their roles within the family—the phenomenon of *academic guilt*, and their caring roles, all contributing to higher levels of emotional exhaustion (Kasymova et al. 2021, 419; Yildirim and Eslen–Ziya 2020, 243; Walters et al. 2021, 2). Also, we found that women were more likely to report family challenges. Conversely, a U.K. study did not find an

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association between gender and caring responsibilities, but women and men who were middle–aged were more likely to be caring for others (Dinu et al. 2021, 13). In Ireland, no associations between socio–demographic characteristics and the mental health of academics were found (Shen and Slater 2022, 90).

Most academics in this study were permanently employed. Being permanently employed was associated with lower Perceived Mental Health and Adaptive Behaviours. This finding is unexpected and thus requires further research. For example, in the United Kingdom, permanently employed staff had more confidence in their digital abilities (Dinu et al. 2021, 14). One possible explanation might be that this finding reflects the increased responsibility carried by full–time academics.

Although many family challenges were reported by participants related to having children or childcare, our study revealed that having children might be protective against Negative Perceived Mental Health. This is an interesting finding that should be explored in future research. It might mean that having children provides meaning to a person's existence outside of work. This emphasises the need for workplaces to support parents with childcare facilities in HEI settings or the provision of childcare support. Other recommendations include flexible work hours or arrangements that accommodate academics with children. In our study, living alone also was associated with negative adaptive behaviours within the qualitative data. This highlights the role of meaningful relationships in mental well–being. A study conducted in Saudi Arabia amongst academics led to the finding that higher family bonding was associated with less anxiety and depression, particularly among women (Alfawaz et al. 2021, 3). This calls for an open dialogue about the importance of supportive work–life integration that supports flexibility and personal autonomy in managing work and family responsibilities, acknowledging the restorative benefits of meaningful relationships and activities and their contribution towards productivity in the workplace (Bartlett et al. 2021, 8). We need to advocate for systemic change that will require deep reflection on the values and norms that drive the academic project.

In our study, professors were more likely to report negative adaptive behaviours, whereas lecturers were more likely to have lower Perceived Mental Health. Previous research has shown that academics with a full teaching load and those in managerial positions with compounding work demands suffered the highest levels of burnout, whereas those only involved in research had lower levels of burnout (Salimzadeh, Saroyan, and Hall 2017, 32). Excessive job demands with low resources have psychological and physical costs. In the United Kingdom, seniority predicted an

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increase in workload during the COVID–19 pandemic, with increased time spent on meetings and contingency planning (Dinu et al. 2021, 13). These findings indicate that different models of support might be needed for early career academics/lecturers with a full teaching load who are attempting to advance their research careers versus established professors who also might fulfil managerial positions.

## Theoretical underpinnings for the mental well–being of academics

As seen in the results of this study, the mental well–being of academics is multi–faceted and is influenced by their work and social contexts. The Job Demand–Control–Support model of Karasek and Theorell (1990) holds that academics face high levels of demands (research, teaching, administrative) and that the lack of control over these leads to increased levels of stress. Stress is mitigated by supportive relationships with supervisors and colleagues and by boosting self–efficacy. It could therefore be posited that less control over work demands coupled with the lack of self–efficacy in online teaching and low levels of interaction with colleagues during the COVID–19 pandemic, as seen in our results, negatively impacted mental well–being. However, these demands were beyond the work environment and role strain was experienced with domestic and other duties – and impacted individuals differently – which means that other theories like Role Strain Theory (Goode, 1960) should be considered. A bioecological systems theory that considers individual micro–level influences and various environmental influences on multiple levels appears to be best suited to explain our results and can be applied to students and academics (Mulisa, 2019).

## Summary of recommendations

We suggest the following:

- Evaluation and strengthening of mental health initiatives in HEIs.
- Implementation of targeted upskill programs, particularly for technology.
- Fostering workplace relationships to build resiliency.
- Promotion of flexibility and work–life balance.
- Tailored support that is gender–specific and based on the needs of the individual (e.g. women, those with children, those living alone, different academic ranks).
- Further research that explores the mental well–being of academics in the aftermath of the pandemic and the theoretical models best suited to explain predictive relationships.

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## CONCLUSION

Our study is one of the first studies in the South African context reporting on the mental well–being of academics. Using a meta–methods research approach allowed us to make meta–inferences via the integration of qualitative and quantitative data, thereby providing a high–resolution picture of the phenomenon. One limitation of this study is the use of a convenience sample and the relatively low response rate—both of which affect the external validity (i.e., generalisability of the findings). Despite this, the instrument that was used had acceptable score validity and score reliability measures and produced similar results to studies conducted in other contexts, making the results trustworthy. In the context of ongoing online learning pedagogies and working from home arrangements, the mental well–being of academics in HEIs should be effectively supported using differentiated/tailored/personalised approaches.

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