

Scientists and researchers being bombarded with unfathomable quantities of information during the pandemic may contribute to the burden of reported mental health illness in academics.

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ABSTRACT:

Background and Aims:

Mental Health [MH] of researchers, clinicians, policy makers and the public has been topical during the pandemic. The invisibility of MH issues of all persons was recently documented in a publication titled; Probing MH Invisibilities during a Global Pandemic. The COVID-19 impact on researchers including changes in productivity, research focus and training has been reported on. Documentation prior to the pandemic in relation to stress and workload has also been reported and includes a bibliometric analysis of workplace MH in Canada, 1991-2002.

Methods:

A search strategy was created using the PubMed MeSH Browser.

The MeSH (Medical Subject Headings) is the NLM controlled vocabulary thesaurus used for indexing articles for PubMed and can be found at; <https://www.ncbi.nlm.nih.gov/mesh>. The search was; ("Mental Health"[Mesh]) AND "Research Personnel"[Mesh].

Results:

The search retrieved n=112 records [n=47 no abstract, also one Chinese, one Portuguese, three Spanish]. Ten abstracts included the word training in the title [example; training researchers in MH, 'embodied lived expertise' of researchers incorporated into training, and including MH research training in systemic reviews]. Four reviewed the COVID-19 pandemic impact on medical researchers [one on early career researchers, one on scientist's MH, another within a Canadian hospital, and lastly researcher burnout]. Five were on research ethics. Other retrievals included conceptualizing MH by including surveys of academic researchers or including MH researchers who had a role in consumer advocacy agencies, while another investigated researcher's MH and the potential of participatory action research. Collaborative initiatives and capacity building in Sub-Saharan Africa, integrating First Voice perspectives into MH Projects, and facilitating MH research including researchers: using mixed-method study practice-orientated research have been published. Other titles included; mapping MH, mentoring, and MH status of Japanese male researchers.

Conclusions and Significance/Impact:

Making visible the MH issues of the research workforce in the global context is paramount.

Keywords: COVID-19, Mental Health, pandemic, researchers, Scientists



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How to Cite

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INTRODUCTIONS:

Mental health crises of various natures can affect academics [Fessenden, 2021]. A comparative study in Japan of behavioural, physical and mental health status, reported that the term-limited researchers suffered more from fatigue, due to longer working hours, than their colleagues [tenure track researchers] [Nakao et al, 2006].

Training programs have been instigated that focus on mental health. One such program is; Training LEADers to Accelerate Global Mental Health Disparities Research (LEAD) Program: A Research Training Program Protocol [Sensoy Bahar et al, 2021]. This research training program focused on global mental health disparities research from under-represented minority group early career researchers.

Training of trainers in systematic reviewing that involved capacity-building in mental health research was reported on [Jack et al, 2020]. Synthesis of existing evidence being locally relevant mental health research is essential. Twelve trainers facilitated a total of seven workshops (total 103 trainees). Evaluation of the first workshop run in each country found significant improvements in mean knowledge scores and in two of the three countries there were efforts to integrate into the university curricula the material. It proved a low-cost way to develop individual's technical skills, the capacity of universities, and to promote capacity building research program sustainability.

In Sub-Saharan Africa, a manuscript documents the partnership for mental health development being a collaborative initiative for research and capacity building [Gureje et al, 2019]. Researchers participated in the training workshops and several established mentor-mentee relationships, resulting in successful publications and grant applications. Diversity in mentoring, via train the trainers enhanced learning [Jeste et al, 2009].

The COVID-19 pandemic has had negative repercussions on research globally, which includes loss of productivity [Harrop et al, 2021]. There has been difficulty posed as a result of not being

able to gain ethical clearance in time, difficulty with research as a result of social distancing measures, lockdowns, accessibility issues and delays with funding [Sharma et al, 2020]. These authors state there have been reports of various symptoms and signs manifesting in researchers including that related to alerted sleep, appetite, interpersonal issues, motivation, procrastination and feelings of guilt. Due to a failure of reaching research goals, scientists can experience stress, disinterest, anxiety, despair, pessimism, and exhaustion which can lead to burnout.

The COVID-19 pandemic has resulted in many economic, policy, and government implications and Hilton has performed a literature search specific to Australia that included policy and media releases [Hilton, 2022a]. She has also expanded upon this research by assessing global pandemic policy specifically in relation to workplace health management, health services and systems [Hilton, 2022b].

There is global concern about psychological distress associated with COVID-19 amongst healthcare staff [McAndrews et al, 2021]. These authors report on a meta-analysis by Pappa and colleagues which included 13 studies finding that 23% of respondents reported symptoms of anxiety or depression [Pappa et al, 2020].

One factor resulting in stress is related to the explosion of scientific publications on the topic of COVID, which means that researchers are overwhelmed with information. Oliveira and colleagues performed a bibliometric analysis of the scientific literature on coronavirus [COVID-19] [Oliveira et al, 2021]. The authors utilised, the ISI Web of Knowledge/Web of Science (WOS) as the database and gathered data in May 2020 and then analysed the data. At this time, they found 2,625 published papers in 859 different journals that incorporated 9,791 authors across 3,365 research institutions, spanning 105 countries. Given that analysis was some time ago, should this be repeated in 2023, the outcomes and results would have increased.

To improve the quality and relevance of research priorities, outcomes, and knowledge translation the incorporation of lived experience into mental

health research is necessary [Bellingham et al, 2021].

An improvement of the relevance of the research can be obtained when the lived experience of academic researchers is applied to academic work. In addition, potentially this can destigmatize mental illness within academia [Hawke et al, 2022].

Other researchers have also noted positive outcomes of those with lived experience, but as yet academic positions for those being experts by experience in mental health have not been widely employed [Happell et al, 2023]. This author performed a Qualitative exploratory, study with in-depth individual interviews with 16 academics. Various motivations were identified and included belief in the value of precise knowledge and proficiency and identifying the essential role of experts by experience. Research through co-leadership, has also been performed with the first voice perspectives, people with mental health lived experience challenges [Lauckner et al, 2018].

Aside from lived experience, a joint participatory action research agenda that incorporates clients, professionals and researchers in mental healthcare possibly can bridge the research-practice gap [Van den Steene et al, 2019]. This combined expertise and experience enriches knowledge, optimises practice and can be empowering. In fact, the establishment of Expert Consumer Researcher Groups in mental health research is both relevant and contributes to credibility [Scholz et al, 2019]. This could contribute to mental health research quality [Scholz et al, 2019]. However, the vulnerability of certain people must also be considered [Lajoie et al, 2020].

In fact, from years 1991 to 2002, there has been more scientific publications on mental health in the workforce [Archambault É et al, 2004]. The authors searched the Medline biomedical papers database to measure scientific output at the world, Canadian, provincial, urban, institutional and researcher levels. At the world level, during the past 12 years, science output has doubled on mental health in the workplace and in fact tripled at the Canadian level.

Various manuscripts where no abstract was available that report or investigate mental health in researchers include publications titled; Stress, anxiety, harassment: huge survey reveals pressures of scientists' working lives [Abbott, 2020]; The mental health of PhD researchers demands urgent attention [No authors listed, 2019a]; PhDs: the tortuous truth [Woolston, 2019]; Funders pledge career support for UK researchers [Woolston, 2019]; On research culture and mental health [Iandolo et al, 2019]; Being a PhD student shouldn't be bad for your health [No authors listed, 2019b]; Better mentoring stands to boost junior researchers' mental health [Perlova, 2018]; A PhD state of mind [No authors listed, 2018] and Stress makes medics ever gloomier [Pearson, 2006].

In order to enhance the understanding of mental health issues among researchers, that may or may not relate to the pandemic, the following literature search was performed.

Methods:

A search strategy was created using the PubMed MeSH Browser. The MeSH (Medical Subject Headings) is the NLM controlled vocabulary thesaurus used for indexing articles for PubMed and can be found at; <https://www.ncbi.nlm.nih.gov/mesh>. The search was; ("Mental Health"[Mesh]) AND "Research Personnel"[Mesh]). An additional search was performed as above, but with the addition of another Mesh term (COVID-19"[Mesh]) with the Boolean operator AND, stringing it to the first search string.

Results:

The search retrieved n=112 records [n=47 no abstract, also one Chinese, one Portuguese, three Spanish]. Ten abstracts included the word training in the title [example; training researchers in MH, 'embodied lived expertise' of researchers incorporated into training, and including MH research training in systemic reviews]. Four reviewed the COVID-19 pandemic impact on medical researchers [one on early career researchers, one on scientist's MH, another within a Canadian hospital, and lastly researcher burnout]. Five were on research ethics. Other retrievals included conceptualizing MH by including surveys of academic researchers or including MH researchers who had a role in consumer advocacy agencies, while another investigated researcher's

MH and the potential of participatory action research. Collaborative initiatives and capacity building in Sub-Saharan Africa, integrating First Voice perspectives into MH Projects, and facilitating MH research including researchers: using mixed-method study practice-orientated research have been published. Other titles included; mapping MH, mentoring, and MH status of Japanese male researchers. The second search retrieved $n = 8$ records. Six of these records had no abstract available. However, one of the records could be accessed and the full text obtained via another journal link.

Discussion:

The pandemic has impacted researchers immensely. In fact, in one publication, reductions in productivity were reported by 85% of early career researchers as a result [Harrop et al, 2021]. This manuscript which focused on autism spectrum disease researchers, documented impacts on participant recruitment, personal mental health, increased home needs as well as increases in burnout and anxiety.

The Pandemic has resulted in researchers scrambling to balance personal and career driven goals [Chan et al, 2020]. In addition, there is stress related to the pressure to target antibodies, generate vaccines and to perform large-scale testing. Being at the front line in terms of public health work can contribute to burnout. Mental resilience is necessary as other work which maybe in any field including neuroscience, oncology or cardiology as examples is shelved for the time while the focus turns to the pandemic.

Various authors have reviewed literature, and / or have worked towards the development of new tools, resources or understandings. In addition, government websites addressed issues. The Australian Government Department of Health website, with the dedicated link listing all the coronavirus (COVID-19) news reports, statements, and media releases included listings on mental health impacts from the Australian Health Protection Principal Committee [Hilton, 2022a].

Training programs have focused on global mental health disparities research for early career researchers from under-represented minority

groups [Sensoy Bahar et al, 2021]. This two-phase training program where trainees are matched with mentors meant they participated in an intensive 12-week program that sought to address global mental health disparities across all ages, using evidence based, culturally appropriate and contextually-congruent services.

Capacity-building approaches to empower emerging mental health systems in low- and middle-income countries' (Ethiopia, India, Nepal, Nigeria, South Africa, Uganda) have included various target groups [mental health service users and caregivers, service planners and policy-makers, and mental health researchers] [Semrau et al, 2018], [Hanlon et al, 2018]. Various collaborations between consumer and non-consumer researchers help contribute to mental health research that has a stronger consumer focus and hence added quality [Scholz et al, 2019]. An engaged approach around mental health research includes community partners informing researchers on issues related to mental health [Thomas et al, 2021].

Toronto's University Health Network (UHN), the largest academic hospital network in Canada, installed new resources in 2020 focusing on work-from-home, wellness and mental health resources. A brief survey that represented occupations including (clinical, administrative, research) and work situations (work-from-home, typical clinical, redeployed). found mental health symptom elevation in 47% of respondents [McAndrews et al, 2021].

Mapping exercises on the topics of mental health research showed that research output in Pakistan is low in number and quality, so strengthening research capacity at all [individual, organizational and macro-systems] is warranted [Naqvi et al, 2007].

A complete conceptual framework for public mental health was reported on which brought together academic research, policy and practitioner views, and lived experience perspectives [Dykhhoorn et al, 2022]. The development included a state-of-the-art academic and grey literature review, the creation of mind maps, in-person workshops, consultations, and an online

survey with academics, practitioners, policy makers, and members of the public. The conceptual framework includes relevant knowledge, highlights future areas for focus, leading to creation of an online tool and infographic. This can be utilised by practitioners and by the general public being a resource to identify mental health interventions.

Telemedicine can be accessed by academics for mental health support [Fessenden, 2021]. The use of digital platforms was used to attempt to solve various of the challenges in data collection. Yet this can result in issues related to the applicability of obtained results, reduced response rates, and issues regarding privacy and confidentiality [Sharma et al, 2020].

A focus on researcher's mental health can enhance researcher's well-being and output and this information can be utilised should there be unforeseen future events [Sharma et al, 2020].

It must also be remembered that researchers are also consumers. While they may conduct research, run labs and perform literature searches, they may also be responsible for a family, extended family and attend clinics themselves not as an investigator/ instigator of a trial, but as a recipient/consumer of care or treatment. For this reason, research that relates to consumer mental health, may also be relevant. Hilton's manuscript included various references that focused upon mental health generally during the COVID pandemic [Hilton, 2022b].

Recent research being a systematic review and meta-analysis on the efficacy of micro-breaks for increasing well-being and performance included 22 independent study samples (N = 2335). The random-effects meta-analyses shown statistically significant but small effects of micro-breaks in boosting vigor ($d = .36, p < .001; k = 9, n = 913$) and reducing fatigue ($d = .35, p < .001; k = 9, n = 803$) [Albulescu et al, 2022].

I have always found exercise and physical activity to be the most beneficial form of therapy for alleviating stress, anxiety and depression [prior to reading any literature], in addition to this being without cost or inconvenience in some instances [if you run or walk as I like to do], and recent research

evidence published provides evidence of favourable outcomes [Singh et al, 2023]. An overview of systematic reviews found that physical activity is highly effective for alleviating symptoms of depression, anxiety and/or distress in adults, the general population, those with mental health disorders and/or chronic disease. Physical activity should be included in the treatment for management of depression, anxiety and psychological distress.

As researchers we need to also put things into perspective. While there is a lot of reports, publications and documents detailing, stress, anxiety, depression and burnout during the pandemic, of researchers and the general public, we must be mindful that many of us are used to living in an opulent, blessed world of plenty. We should have the resources to be able to think laterally, draw on our resources and reflect on how past generations may have dealt with similar scenarios [Hilton, 2021]. Hilton in this manuscript compares the Current Coronavirus COVID-19 Pandemic (SARS CoV 2) and the Spanish Flu Epidemic. In fact, we should always use comparisons like this, to etch into our mind the fact others have had to deal with far worse, in terms of experiencing like scenarios but with minimal resources at their disposal. "Stop and smell the roses" may be a famous phrase that has been used by many generations in the past, a simple, uncluttered method to deal with stress. A century ago, there may not have been evidence in support of this phrase, but a manuscript in the Journal of Personality and Individual Differences implies that appreciation may in fact contribute to life satisfaction, so to have this documented is added justification for the phrase [Fagley, 2012]. If you are a researcher reflect on the fact, the Spanish Flu Era may have created more suffering for you if you had been alive then. Also, evidence suggests smelling the roses while you exercise may benefit your mental health.

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well-being of researchers during the pandemic & her guidance helped in my successful submission of abstracts [see below] that this manuscript is based upon.

Hilton D. Nov 2022. Australian Society for Medical Research hybrid conference. Exceptional scientists and researchers have to understand increasingly unfathomable quantities of information during the pandemic, which may cause what is considered rare and/or invisible MH illness in academics, yet this should be acknowledged.

Hilton D. Nov 2022. Australian Society for Medical Research hybrid conference. Highlighting exceptional people in Medical Research - Mental health illness among scientists and researchers at times may seem rare and/or invisible to others, yet publications highlight the importance of recognition.

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