Learning to be well in the health workplace: an integrated model [version 1]

Matthew Links², Marise Lombard¹, Benjamin C Forster³, Grant Phelps⁴, Paula Brough⁵

¹Griffith University School of Medicine
²Griffith University
³University of Sydney
⁴Deakin University
⁵Griffith University School of Applied Psychology

Abstract
This article was migrated. The article was marked as recommended.

Introduction: Problems with the well-being of workers in health is a crisis that directly impacts on health care workers themselves and on the quality of care provided. Academic inquiry has utilised a broad diversity of perspectives. There is an urgent need for theory that guides interventions and mediates between the perspectives taken.

Methods: An initial model was generated by mapping concepts from a meta-synthesis of systematic reviews of resilience, burnout, well-being and compassion fatigue. An iterative process identifying and critically applying additional literature refined the model.

Results: The final model addressed positive /negative; individual/organisational and focal or global perspectives. It was structured on the Job-demands resources model with stressors mediated by cognitive appraisal, and organisational climate. A cycle of learning in practice was identified as the key to adaptation. The relevant educational domains include learning to be, believe, feel, do, Interact and adapt to maximise well-being.

Discussion: An integrated, evidence based learning model of well-being in the health workplace has been developed which may act as a guide for both individuals and organisation to maximise well-being. Implications of the model have been discussed.

Open Peer Review

Migrated Content
"Migrated Content" refers to articles submitted to and published in the publication before moving to the current platform. These articles are static and cannot be updated.

1. P Ravi Shankar, American International Medical University
2. BALAJI ARUMUGAM, TAGORE MEDICAL COLLEGE AND HOSPITAL
3. Balakrishnan Nair, Centre for Medical Professional Development and University of Newcastle

Any reports and responses or comments on the article can be found at the end of the article.
Keywords
learning, wellbeing, resilience, burnout, organizational psychology, job demand-resources, mindset

Corresponding author: Matthew Links (linksmj@protonmail.com)
Competing interests: No competing interests were disclosed.
Grant information: The author(s) declared that no grants were involved in supporting this work.
Copyright: © 2021 Links M et al. This is an open access article distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.
How to cite this article: Links M, Lombard M, Forster BC et al. Learning to be well in the health workplace: an integrated model [version 1] MedEdPublish 2021, 10:45 https://doi.org/10.15694/mep.2021.000045.1
First published: 12 Feb 2021, 10:45 https://doi.org/10.15694/mep.2021.000045.1
Introduction
The wellbeing of health-workers is an issue with an enormous human toll and impacts on the sustainability, quality and safety of health care systems (Dewa et al., 2014). Supporting the wellbeing of health care workers is one of four key aims for a quality health system (Bodenheimer and Sinsky, 2014). The literature has taken three major perspectives: (1) clinical, with a focus on individual psychology, mental health problems (depression, suicide, burnout); (2) organisational, occupational health and organisational psychology; (3) educational, where education has been utilised as an intervention.

An educational perspective suggests learning as a solution (Bastounis et al., 2016; Stahl, Sharplin and Kehrwald, 2018) but the “wellbeing curriculum” has not been well defined. Educational theory is not well integrated into the occupational health and clinical discourses; and theory of workplace stress are not well integrated into educational discourse around wellbeing.

There is an urgent need for a model of wellbeing in the health workplace that mediates between the different discourses and perspectives taken. An integrated model summarises and mediates the scholarship in multiple domains and helps clinical educators and health managers implement solutions.

Aim
Develop a learning model of wellbeing that builds on existing models of health and learning that is fit for purpose to guide interventions.

Methods
The methods used a systematic review to identify a starting point in the literature, but subsequent questions were explored non-systematically to allow an iterative and expansive approach to the questions asked. This process was guided by the SRQR standards for qualitative research (O’Brien et al., 2014). The literature analysis involved considerations of underlying paradigms and assumptions and drew upon the RAMESES standards (Realist And MEta-narrative Evidence Syntheses: Evolving Standard) with principles of pragmatism, pluralism, historicity, contestation, reflexivity and peer review (Wong et al., 2013). The methods are summarised in Figure 1.

Phase 1 was a review of underlying concepts and perspectives. Given an extensive existing literature of systematic reviews, a meta-review was performed of the published systematic reviews of resilience and burnout in health care workers. This review was then expanded to include other concepts such a compassion fatigue. This enabled identification of existing models; key concepts; and perspectives. The initial (primary) literature search was conducted by two authors (ML1 and ML2) using the Search strategy: Psychological resilience, or compassion fatigue or burnout, professional [MESH term or Keyword] AND systematic review [Title]). Databases search included PubMed, psychoinfo and CINAHL.

Papers were selected for inclusion using the selection criteria that: (1) it was empirical data; (2) the focus of the study was well-being or resilience; (3) that the subjects were health-care workers; (4) that the challenge for resilience or well-being was working in the health-system (not a disaster or other threat); and (5) that the language was English.

![Figure 1. Summary of methods: Phase 1 identification of the literature. Phase 2 generation of an initial model; Phase 3 iterative improvement of the model.](image-url)
Given the interest in including broader concepts of wellbeing a search for the broader term of wellbeing and health care providers was conducted in PubMed. The large number of papers identified were of low relevance so a process of screening till saturation was adopted. This entailed using the PubMed sort by relevance function (Best Match) (Fiorini et al., 2018) and screening the results according to the selection criteria. This process was continued until 100 consecutive studies were screened without an eligible study being identified.

A variety of quality frameworks were considered to assess the quality of papers identified. However, these prioritized methodological and procedural quality of systematic reviews rather than the quality of the concepts (Long and Godfrey, 2004; Kitto, Chesters and Grbich, 2008; Kuper, Lingard and Levinson, 2008; Pace et al., 2012). None of the existing tools were fit for purpose. For the purpose of this analysis the critical question was not whether the review was conducted rigorously but whether the conceptualisation of the problem added to the existing model. This judgement by the authors was part of the iterative process of model generation.

Themes were identified and recorded in a excel spreadsheet by two authors (ML1 and BF). Identified literature was recorded in a Zotero database.

Phase 2 was generation by one author (ML1) of an initial model through mind-mapping of concepts onto the IPO model and subsequent modification by consensus of the research group. Mind-mapping was chosen as an open ended, visual way of situating identified concepts within an initial framework (Crowe and Sheppard, 2012).

Phase 3 was an iterative process of model refinement by examining the proposed model from different perspectives. An underexamined perspective was identified during the previous phase of inquiry. Additional literature was identified through focused searches, forward and backward snowballing and from personal databases. Consideration was given beyond the health field and the initial focus on systematic reviews. Theoretical perspectives trusted by relevant communities of practice were prioritised. Trust was assessed by the utilisation of models in subsequent research and by expert assessment of peer opinion. The literature database was supplemented by additional searches and the model evaluated according to the following criteria: (1) Is the model comprehensive; can it be simplified; Is it a practical; and what other perspectives need to be addressed?

Rigour was addressed by careful consideration of researcher expertise and characteristics with recruitment of additional authors to provide alternative perspectives. The final research group included expertise in medicine, education, nursing, health management and organisational psychology. Reflexivity was promoted through an online reflective log and an iterative process of critical evaluation and consensus through teleconference, face to face meetings and circulation of drafts by email. Trustworthiness of the final result was enhanced by prioritisation of trusted existing models within the model building process, thus building on existing critical opinion.

**Results**

**Phase 1: Identifying the literature**

A total of 146 studies were identified by the original search strategy in PUBMED examining reviews of psychological resilience, compassion fatigue and professional burnout. The search was then expanded to include CINAHL (n=96) and Psychinfo (n=41). An initial theme identified was the difference between the individual psychological and organisational perspective, so the search was expanded to include organisational climate and occupational health (n=55). Papers that did not deal with health workers, were opinion pieces or were not focused on the wellbeing of health workers were excluded, producing 136 papers for analysis.

The identification of literature in Phase 1 is summarised in Figure 2.

Significant variations in the perspectives taken were identified. Although these perspectives are represented as black and white distinctions, it is acknowledged that this is a simplification and that there are continuums in perspective and significant overlaps. Perspective were classified as: Individual versus organisational; positive versus negative; and global versus focused. Burnout, as an example, is an individual negative and relatively global perspective, contrasting to the positive perspective of resilience and compared to more focal constructs of compassion fatigue or existential burnout/distress. These difference in perspective are summarised in Figure 3.

Papers were classified into major and minor themes. The major perspective taken was individual rather than organisational. Major themes were descriptions versus interventions: Minor themes were: existential issues (n=10); consequences (n=6) and biological factors (2). A historical trajectory was identified in the questions being asked and the theory and terminology utilised. A critical approach identified the influence of power within these transitions as there have been
strong feelings on the part of many health workers that an individual focus has been a way of attributing blame and avoiding organisational responsibility (Chamorro-Premuzic and Lusk, 2017; Aubusson, K, 2017).

A major variation was that of focus. The Input-processes output model was identified as a useful organising structure. Using this system focus was on: (1) inputs (job demands, resources etc); (2) processes that link inputs and outputs; (3) outputs (resilience burnout, wellbeing, quality and safety of care etc); and (4) environment (consideration of the environment that these processes occurred in).

The terminology used described a historical trajectory from workplace stress to outcomes of stress: burnout, resilience and wellbeing (Eckleberry-Hunt et al., 2009). A very broad range of overlapping terminology was identified with distinctions between concepts often problematical (Southwick et al., 2014; Bianchi, Schonfeld and Laurent, 2015; Litz and Kerig, 2019). Burnout, resilience, workplace stress, moral distress, secondary trauma, compassion fatigue, and workplace health were all identified as relevant terms within the literature. Differences in the perspective take were partly accounted for by differences between a positive (resilience) or negative (burnout) perspective and partly by variations in scope from a focused outcome (absenteeism or moral distress) to holistic concept such as wellbeing.

**Figure 2. Results of the literature search.**

**Figure 3. Variations in perspectives taken. Global perspectives were divided into a matrix of positive versus negative and individual versus organisational.**
There has been a historical trajectory in the theoretical perspective taken. Initial work was based on application of behavioural models of stress to the workplace with a focus on the psychological processing of stress and the identification of important concepts such as self-efficacy, autonomy and baseline personality traits. Important theoretical constructs were Lazarus and Folkman’s transactional model which highlighted that the response to stress is a process which is mediated by a process of cognitive appraisal of the work environment (Lazarus and Folkman, 1987).

Early work focused on precise definition of terms and tools for measurement of well-defined outputs of workplace stress such as the development of the Maslach burnout inventory (Schaufeli, Maslach and Marek, 2017), asking questions around prevalence in different communities or professional groups (IsHak et al., 2013; Adriaenssens, De Gucht and Maes, 2015; Chuang et al., 2016; Dimou, Eckelbarger and Riall, 2016). Important concepts were the construction of burnout as a response to stress with dimensions of exhaustion, disengagement and lack of accomplishment. The question was often -what is the prevalence in my “tribe”: physician burnout or burnout in nurses rather than a focus on teams in the same work environment. The introduction of work hour limits in Europe and the USA led to an evaluation of the impact of changing this measure of job demand (Martini, Arfken and Balon, 2006; Landrigan et al., 2008).

The accumulating literature on prevalence across disciplines has led to the concept of a crisis and increasing calls for action highlighted by high profile and personal examples. The COVID-19 pandemic has highlighted the implications of the physical and emotional health of health workers in a dramatic way.

A major focus, particularly of early models was identification on the relative importance and interactions between various inputs into wellbeing. This was reflected in the demonstration of the importance of imbalance models such as job demands and resources (Bakker and Demerouti, 2007), control (Demerouti et al., 2001) or rewards (Basińska and Wilczek-Rużycka, 2013; Morgan, Dill and Kalleberg, 2013). The question was often: what are the important determinants of (stress, burnout, resilience) in this context? Study of the outputs of workplace stress have moved from a negative (burnout) to a positive perspective (resilience) to a more holistic perspective (wellbeing). These shifts have coincided with a parallel discourse around how we define health (Huber et al., 2011). This is reflected in a move from an absence of illness-based definition, to a more holistic assessment of human needs. Influential perspectives include Maslow’s self-actualisation theory (Maslow, 1970), and Sens capability approach (Sen, 1993).

Subsequently the focus has moved to interventions, particularly psychological interventions conceived as “stress management” (Reynolds, Taylor and Shapiro, 1993; Bragard et al., 2010); from cognitive behavioural therapy (Gardner et al., 2005) to massage (Brennan and DeBate, 2006) and aroma therapy (Hansen, Hansen and Ringdal, 2006). More recently mindfulness-based stress reduction has been a dominant method (Goodman and Schorling, 2012; Luken and Sammons, 2016; Daya and Hearn, 2018), and there has been a more dynamic approach focused on recovery, and a more holistic consideration of environment to include home and (work-life balance).

Consideration of workplace stress as a process highlighted the mediating role of specific behaviours between perception and outcomes. These behaviours included practices of clinical care, selfcare and learning. Learning was identified as the key to adoption of adaptive or mal-adaptive behaviours leading to positive or negative outcomes.

The organisational perspective reflects a fundamental recognition about the inadequacy of an individual perspective and the importance of the environment. This also has undergone a historical trajectory that has moved from a focus definition and measurement of summative concepts such as organisational culture and climate towards a more differentiated approach to construct climate in multiple ways e.g. a safety climate or learning climate. The organisational perspective has also moved towards a more dynamic consideration of how adaptation occurs, with a greater focus on recovery, as well as a more holistic approach to the way that work interacts with home (work-life balance or integration).

The key concepts and theoretical frameworks identified, definitions and associated references are outlined in Supplementary File 1.

**Phase 2: Identification of initial model assumptions**

These considerations lead to the adoption of the input process and outcomes model (IPO) as a basic framework to provide a trusted organising conceptual framework. The foundational model for stress-response has been the transactional stress model, so this was fitted to an IPO model. “Objective” inputs into the workplace were identified as stressors/threats, outputs of the system divided into wellbeing and performance (individual or system). The mediating processes are: (1) cognitive appraisal in identifying the perceived stressors; and (2) the identification of specific behaviours (clinical practices, self-care behaviours, etc). The adaptation to workplace stress occurs within a specific work climate or organisational environment. The IPO model, Lazarus workplace transactional stress model and organisational climate
literatures, were therefore identified as key elements for the initial model. Characteristics of the initial model are given in Figure 4 and published online at [Mindmeister](#).

**Phase 3 Iterative improvement**

**Improving comprehensiveness**

The model was revised by targeted exploration of theory around the concepts outlined, expanding searches, where necessary beyond systematic reviews, beyond health and by recruiting new theoretical perspectives. McGrath generalised the role of perception in stress to include perceived demand, perceived ability to cope, perceived impact (McGrath et al., 1970). Inputs of stress have been summarised by Maslach’s six areas of worklife (Leiter and Maslach, 1999) and the concept of wellbeing elaborated by Warr’s vitamin theory (Warr, 2008). Concepts of recovery were strengthened by the stressor-detachment model (Sonnenstag and Fritz, 2015). The issue of environment was broadened to differentiate between different aspects of environment such as the climate of psychological safety (Dollard and Bakker, 2010) and learning (Lases et al., 2019) which impact in different ways. The coherence of these concepts with the initial model increased its trustworthiness.

**Reducing complexity**

Subsequent improvement of the model focused on reducing complexity and synthesis of overlapping concepts within the existing model. Much of the complexity to the model comes from integrating organisational and individual perspectives so the model was simplified from a comprehensive model (simultaneously dealing with individual and organisation levels) to a multi-level model (able to be applied to each level). Identification of learning as a key process led to consideration of learning at either as individual learning (Sherwood and Zomorodi, 2014). Inputs were consolidated using the six areas of worklife (Leiter and Maslach, 1999) and the literature on mindsets; (Sherwood and Zomorodi, 2014, Yeager and Dweck, 2012; Ben-Avi, Toker and Heller, 2018) was introduced as both an input to the system and a potential learning focus. The concept of a mindset or schema allowed collation of multiple beliefs about stress, clinical practice and improvement in ways that impact on the response to stress. Thus, a growth mindset, where the ability to cope with stress is not considered a fixed trait, promotes resilience (Yeager and Dweck, 2012). Promoting and teaching such a mindset becomes a critical strategic priority.

![Figure 4. The initial mapping of concepts from phase 1 onto a mind map. Concepts identified in the literature review are mapped onto this framework.](image-url)
Outputs were consolidated into those related to wellbeing and performance with a continuum of outcomes between negative (burnout, clinical error) and positive (resilience wellbeing and high-quality care).

**Identification of additional perspectives**
Two areas were identified as under-theorised in the initial model. The first was the relationship of the proposed model to the Job demand-resources model which was identified as a highly trusted model in the existing literature. The second area was that of learning which had a role in many of the processes identified and potential interventions. These areas were selected for further iterations of inquiry.

**Re-appraisal against existing models (JD-R) and focus on learning**
The major difference from the simple presentation of the JD-R model was the highlighting of the difference between appraised job demands/resources and the environmental job demands. Consideration of learning in practice to be a critical mediator of wellbeing raises the question as to what drives this cycle? We drew on the JD-R models conceptualisation of the key role of energy and motivation to highlight these as drivers. The major difference between this model and other models, was the focus on learning in the workplace. This raised the question as to what is learnt. We therefore consolidated relevant learning domains as increasing circles of focus from the inner self to the iteration with others. Thus, drawing on professional identity, the practitioner learns to be a doctor or a nurse, reflecting the critical existential domains of burnout and wellbeing. Drawing on the literature on cognitive appraisal and mindsets there are important beliefs which are both inputs into the system and learnt outcomes. Beliefs such as self-efficacy, a growth mindset - where obstacles are opportunities for learning and beliefs that they system is supportive of you - or not. A further internal aspect of wellbeing related to the affective domain of learning and the learning of skills in emotional self-regulation and self-care.

A critical domain of learning is what practitioners do, of practice. This includes learning to communicate better, learning to insert an airway efficiently while minimising risk of self-contamination, learning to set aside time for reflection and study. The team-based nature of contemporary health practice does require moving beyond the individual perspective and here the practitioner needs to learn how to interact. Skills in teamwork, dealing with interpersonal conflict, asking for help etc, are important skills for avoiding burnout, thriving and delivering high quality care. The final level of learning moves from a static perspective to a dynamic one and that is learning to adapt. Learning to learn, learning how to respond to adverse events, planning self-care when strategies are not working are necessary in a dynamic model. The domains of what is learnt are represented in Figure 5.

The final model therefore makes explicit that the wellbeing can be considered at different levels as the wellbeing of the individual, the organisation or the society; and that each level goes through a process of appraisal of demands and resources, which mediates stress. The main process is an iterative process of learning and adaptation of behaviours. The drivers of this process are motivation and energy. These produce outputs of wellbeing and performance. Each locus of concern interacts with its own environment which moves from the micro to macro approach. The environment however

![Figure 5. Domains of learning relevant to stress and wellbeing. The domains of learning are represented as moving in increasing circles from the personal to the social.](image-url)
can be deconstructed into three main domains— the “objective” environment of physical resources and demands, the appraisal environment which influences how an individual or organisation views the situation and a learning environment which influence show behaviours can adapt.

The issue of what learns and what adaptation occurs can be viewed similarly as circles moving from critical identity questions of “being”, beliefs, emotional response and practice to questions of interaction and adaptation. The final model is represented in Figure 6.

Discussion

This evidence based, multi-perspectival and pragmatic model developed has been developed through a reflexive iterative process drawing on scholarship from multiple discourses. It avoids potential problems associated with choice of either an individual/personal, positive/negative or focused or holistic perspectives associated with existing models of burnout, resilience or workplace stress. The dynamic nature of the model as a cyclical process of experience, learning and adaptation is particularly suited to the implementation of interventions designed to improve wellbeing in the workplace.

Implementation science suggests that solutions to wicked problems need to be tailored to individual contexts and multi-level. Single interventions are likely to have small effects. The first implication of this is that there is a need to understand context and the need for a framework to address what questions are relevant. When assessing the needs, barriers, or enablers in a given context the first step is to make sure that the map covers the whole ground considered relevant by scholarship in this area (Jacobs, Weiner and Bunger, 2014).

The adoption of a dynamic learning in practice model implies that at both an individual and organisational level there is a need for assessment of outcomes from wellbeing and performance perspectives. This data is then available to drive improvements and to make decisions in a learning organisation and individual. This data needs to include a contextual understanding of where the problems and potential improvements from a holistic viewpoint that considers the physical environment, personal and cultural factors impacting on appraisal, as well as the ability to learn, implement improvements and adapt.

The inputs to the system are dominated by demands and resources and the evidence suggest that most of the variance in wellbeing related to organisational factors not individual ones (Williams et al., 2002). Any plan needs to consider the quadruple aim where the wellbeing of staff and the contribution to a sustainable system is balanced against considerations of volume and quality. There is limited capacity to reduce demand or increase resources in health thus the promotion and teaching of efficiency in practices are strategic learning objectives.

The process of appraisal is critically impacted by mindsets that are influenced by personal learning and organisational cultures. Teaching modelling and promoting growth, improvement and systems thinking mindsets are methods of promoting resilience, improving performance and reducing stress. The acknowledgement of the impact of emotions and

![Figure 6. A model of learning to be well in the workplace in response to stress.](image-url)
social support on stress, learning and performance highlights the need for a plan that addresses emotional and social needs as well as cognitive ones

The importance of drivers of energy and motivation as drivers of learning in practice highlights the need for reasonable workhours, promotion of recovery strategy to enhance energy and a culture that explicitly addresses motivation. The importance of learning environment highlights the critical role of clinical supervision both in creating opportunities to learn, safely evaluating performance, and providing support in a challenging environment.

The teasing out of the different elements to be learnt as learning to: be, believe, feel, do, interact and adapt is the first step in developing a curriculum of wellbeing. Any educational programs to enhance wellbeing should consider what combinations of these issues are most important in the current context. Teaching mindfulness is an evidence-based strategy but the potential drivers of learning to be well are much broader than any single strategy.

Organisational learning reprises these concerns but one difference at an organisational level is the importance of organisational structure and positional leadership. Organisational learning requires leadership of change (Senge, 1996) and a climate that promotes continuous learning (Eldor and Harpaz, 2016; Lases et al., 2019). Individual Leadership styles impact on satisfaction and wellbeing (Skakon et al., 2010; Cummings et al., 2018) and there is a need to support leaders’ own well-being and learning (84).

The highlighting of the different aspects of the environment that are relevant to wellbeing emphasises the role of the organisation in establishing a climate that manages resources, promotes positive appraisals and promotes learning. At an organisational level the relevant environment is the broader social environment and prevailing culture around valuing the contribution of healthcare workers, prioritising wellbeing against productivity and investing in learning. Key implications of the model are given in Table 1.

The COVID-19 pandemic highlights many of these issues and has brought the wellbeing of health workers to become front page news. Public health measures to manage demand and identify resources have been key issues. However, resilience becomes a secondary issue in the absence of adequate supplies of personal protective equipment. The pandemic has required enormous changes in practice for individuals and organisations which have required learning, adaptation and dissemination. The appraisal of the situation has been powerfully influenced by issues of meaning, community support and the framing of this work as justifiably heroic.

Limitations of the proposed model relate to balancing simplicity with utility. It is not the only potential model and the benefits over a simpler, or more complex model, are yet unproven. The application depends on how job demands and job resources are conceived. Furthermore, consideration of factors outside the workplace depends on whether they are included as an individual resource or demand. The model is explicitly a learning model and therefore does not take into account fixed personality traits, which may be relevant for other approaches such as selection into a profession.

Another limitation of the multilayer model, separating individual and organisational models, is that it does not emphasise interactions between the layers such as in the job-fit model (Chatman, 1989). The wellbeing of individual healthcare staff can be considered both a result of and a contributor to, the organisation’s performance and its way of working (Dickson-Swift et al., 2014).

The model does lead to some empirically testable hypotheses: are the environment, appraisal environment and learning environment separate entities and how do existing tools address these conceptual differences? What level should

| Table 1. Key implications of the model |
|---------------------------------------|
| Well-being needs to be a priority     |
| Both inputs (stressors) and processes (adaptation) are important |
| Data on both well-being and performance are needed to drive improvement |
| Motivation and energy are required    |
| Growth, improvements and systems thinking mindsets enable adaptive behaviours |
| Learning to be well involves being, believing, doing, interacting and adapting |
| Doing/practicing more efficiently is a win for both well-being and performance |
| Organisational leadership is critical |

educational interventions be aimed at along the continuum from being to adaptation? Can this be assessed and tailored to individual workplaces or individuals? How does this framework support the development of individual or organisational wellbeing plans?

Conclusion
Paracelsus is credited with the statement that all models are wrong, but some models are useful. The strength of this model is that it integrates multiple discourses about health, wellbeing, burnout, occupational health and education, towards a model that is potentially useful in guiding the scope of interventions. Organisations need a conceptual model and a methodology for improving the wellbeing at both individual and organisational levels. The wellbeing of the health workforce, as well as the quality, safety and sustainability of the health system, demand that we get this right.

Take Home Messages
- Wellbeing in the health workplace is critical to the quality of care provided, the sustainability of the workforce and to individual practitioners.
- Job demands, resources, perceptions, work environment and adaptations all contribute to well being.
- Both organisations and individuals can learn wellbeing skills and practices.
- A curriculum of well being involves learning to be, feel, believe, do, interact and adapt in ways that are helpful.

Notes On Contributors
Matthew Links is a medical oncologist and educator with appointments as Professor at Griffith University Medical School and Griffith Institute of Educational Research. ORCID ID: https://orcid.org/0000-0003-3779-3705

Marise Lombard is Lecturer in the School of medicine at Griffith University with degrees in social science, nursing and midwifery and a Doctorate in Medical Education. ORCID ID: https://orcid.org/0000-0002-7883-4262

Benjamin C. Forster is a medical oncologist, palliative care physician and Clinical Senior Lecturer in the School of Medicine University of Sydney. ORCID ID: https://orcid.org/0000-0001-9356-8639

Grant Phelps is a Gastroenterologist, Medical Administrator and Associate Professor of Medical Leadership at Deakin University.

Paula Brough is Professor in the School of Applied Psychology, Griffith University. ORCID ID: https://orcid.org/0000-0002-0374-0026

Declarations
The author has declared that there are no conflicts of interest.

Ethics Statement
This work is exempt from Ethics approval as it does not qualify as human research involving only analysis of published data. It therefore qualifies for an exemption under Australian National Health and Medical Research. Guidelines. https://www.nhmrc.gov.au/about-us/publications/national-statement-ethical-conduct-human-research-2007-updated-2018

External Funding
This article has not had any External Funding

Acknowledgments
To all those who have supported us in our own quest for wellbeing.

All figures. Source: the authors.
Bibliography/References

Adriaenssen, J., De Guich, V. and Maes, S. (2015) Determinants and prevalence of burnout in emergency nurses: A systematic review of 25 years of research. International Journal of Nursing Studies. 52(2), pp. 549-561. Reference Source

Aubusson, K. (2017) “She was eaten alive”: Chloe Abbott’s sister. Sydney Morning Herald. 5 July. Available at Reference Source

Bakker, A. B. and Demerouti, E. (2007) The Job Demands-Resources model: state of the art. Journal of Managerial Psychology. 22(3), pp. 309-328. Reference Source

Basiska, B. A. and Wilczek-Ruzyczka, E. (2013) The role of rewards and demands in burnout among surgical nurses. International Journal of Occupational Medicine and Environmental Health. 26(4), pp. 593-604. Reference Source

Bastounis, A., Callaghan, P., Banerjee, A. and Michail, M. (2016) The effectiveness of the Penn Resiliency Programme (PRP) and its adapted versions in reducing depression and improving explanatory style: A systematic review and meta-analysis. Journal of Adolescence. 52, pp. 37-48. Reference Source

Ben-Avi, N., Toker, S. and Heller, D. (2018) “If stress is good for me, it’s probably good for you too”: Stress mindset and judgment of others’ strain. Journal of Experimental Social Psychology. 74, pp. 98-110. Reference Source

Bianchi, R., Schonfeld, I. S. and Laurent, E. (2015) Dimou, F. M., Eckelbarger, D. and Riall, T. S. (2016) Surgeon Burnout: A Systematic Review. Journal of the American College of Surgeons. 222(6), pp. 1230-1239. Reference Source

Dollard, M. F. and Bakker, A. B. (2010) Psychosocial safety climate as a precursor to conducive work environments, psychological health problems, and employee engagement. Journal of Occupational and Organizational Psychology. 83(3), pp. 579-599. Reference Source

Eckleberry-Hunt, J., Van Dyke, A., Lind, D. and Tucciareone, J. (2009) Changing the Conversation From Burnout to Wellness: Physician Well-being in Residency Training Programs. Journal of Graduate Medical Education. 1(6), pp. 225-230. Reference Source

Eldor, L. and Harpaz, I. (2016) A process model of employee engagement: The learning climate and its relationship with extra-role performance behaviors. Journal of Organizational Behavior. 37(2), pp. 213-235. Reference Source

Fiorini, N., Canese, K., Starchenko, G., Kiriev, E., et al. (2018) Best Match: New relevance search for Pubmed. PLoS Biology. 16(8), e2005343. Reference Source

Gardner, B., Rose, D. J., Mason, O., Tyler, P., et al. (2005) Cognitive therapy and behavioural coping in the management of work-related stress: An intervention study. Work & Stress. 19(2), pp. 137-152. Reference Source

Goodman, M. J. and Schorling, J. B. (2012) A Mindfulness Course Decreases Burnout and Improves Well-Being among Healthcare Providers. The International Journal of Psychiatry in Medicine. 43(2), pp. 119-128. Reference Source

Hansen, T. M., Hansen, B. and Ringdal, G. L. (2006) Does aromatherapy massage reduce job-related stress? Results from a randomised, controlled trial. International Journal of Aromatherapy. 16(2), pp. 89-94. Reference Source

Huber, M., Knotterus, J. A., Green, L., van der Horst, H., et al. (2011) How should we define health? BMJ. 343, p. e4163. Reference Source

IsHak, W., Nikravesh, R., Lederer, S., Perry, R., et al. (2013) Burnout in medical students: a systematic review. The Clinical Teacher. 10(4), pp. 242-245. Reference Source

Johans, S. J., Weiner, B. J. and Burger, A. C. (2014) Context matters: measuring implementation climate among individuals and groups. Implementation Science. 9, p. 46. Reference Source

Kitto, S. C., Chesters, J. and Gribich, C. (2008) Quality in qualitative research. Medical Journal of Australia. 188(4), Available at: Reference Source

Kuper, A., Lingard, L. and Levinson, W. (2008) Effects of the Accreditation Council for Graduate Medical Education Duty Hour Limits on Sleep, Work Hours, and Safety. Pediatrics. 122(2), pp. 250-258. Reference Source

Lazuras, R. S. and Folkman, S. (1987) Transactional theory and research on emotions and coping. European Journal of Personality. 1(3), pp. 141-169. Reference Source

Leiter, M. and Maslach, C. (1999) Six areas of worklife: A model of the organizational context of burnout. Journal of Health and Human Services Administration. 21, pp. 472-489. Reference Source

Litz, B. T. and Kerig, P. K. (2019) Introduction to the Special Issue on Moral Injury: Conceptual Challenges, Methodological Issues, and Clinical Applications. Journal of Traumatic Stress. Reference Source

Long, A. F. and Godfrey, M. (2004) An evaluation tool to assess the quality of qualitative research studies. International Journal of Social
Research Methodology: 7(2), pp. 181-196.

Lukon, M. and Sammons, A. (2016) Systematic Review of Mindfulness Practice for Reducing Job Burnout. *The American Journal of Occupational Therapy: Official Publication of the American Occupational Therapy Association*. 70(1), pp. 70025002Sp1–70025002Sp10. Reference Source

Martini, S., Arfken, C. L. and Balon, R. (2006) Comparison of Burnout Among Medical Residents Before and After the Implementation of Work Hours Limits. *Academic Psychiatry*. 30(4), pp. 352-355. Reference Source

Maslow, A. H. (1970) Motivation and personality. New York: Harper & Row.

McGrath, J. E., Altman, I. United States and University of Illinois at Urbana-Champaign (eds) (1970) Social and Psychological Factors in Stress. New York: Holt, Rinehart and Winston.

Morgan, J. C., Dill, J. and Kalleberg, A. L. (2013) The quality of healthcare jobs: can intrinsic rewards compensate for low extrinsic rewards? *Work, Employment and Society*. 27(5), pp. 802-822. Reference Source

O’Brien, B. C., Harris, I. B., Beckman, T. J., Reed, D. A., et al. (2014) Standards for Reporting Qualitative Research: A Synthesis of Recommendations. *Academic Medicine*. 89(9), pp. 1245-1251. Reference Source

Pace, R., Playe, P., Bartlett, G., Macaulay, A. C., et al. (2012) Testing the reliability and efficiency of the pilot Mixed Methods Appraisal Tool (MMAT) for systematic mixed studies review. *International Journal of Nursing Studies*. 49(1), pp. 47-53. Reference Source

Reynolds, S., Taylor, E. and Shapiro, D. (1993) Session impact and outcome in stress management training. *Journal of Community & Applied Social Psychology*. 3(4), pp. 325-337. Reference Source

Schaufeli, W., Maslach, C. and Marek, T. (2017) Burnout: A multidimensional perspective. in Nussbaum, M. and Sen, A. (eds) *The Quality of Life*. Oxford University Press, pp. 30-53. Reference Source

Senge, P. M. (1996) Leading Learning Organizations. Centre for Organizational Learning MIT. p. 12.

Sherwood, G. and Zomorodi, M. (2014) A New Mindset for Quality and Safety: The QSEN Competencies Redefining Nurses’ Roles in Practice. *JONA: The Journal of Nursing Administration*. 44(Supplement), pp. S10-S18. Reference Source

Skakon, J., Nielsen, K., Borg, V. and Guzman, J. (2010) Are leaders’ well-being, behaviours and style associated with the affective well-being of their employees? A systematic review of three decades of research. *Work & Stress*. 24(2), pp. 107-139. Reference Source

Sonntag, S. and Fritz, C. (2015) Recovery from job stress: The stressor-detachment model as an integrative framework. *Journal of Organizational Behavior*. 36(51), pp. 572-5103. Reference Source

Southwick, S. M., Bonanno, G. A., Masten, A. S., Panter-Brick, C., et al. (2014) Resilience definitions, theory, and challenges: interdisciplinary perspectives. *European Journal of Psychotraumatology*. 5(1), p. 253S8. Reference Source

Stahl, G., Sharpin, E. and Kehrwald, B. (2018) Affective Learning: Adaptation, Resilience and Efficacy. in Stahl, G., Sharpin, E., and Kehrwald, B. (eds) Real-Time Coaching and Pre-Service Teacher Education. Singapore: Springer, pp. 53-65. Reference Source

Warr, P. (2008) Environmental “Vitamins”, Personal Judgments, Work Values, and Happiness. *The Oxford Handbook of Organizational Well-Being*. Reference Source

Williams, E. S., Konrad, T. R., Linzer, M., McMurray, J., et al. (2002) Physician, practice, and patient characteristics related to primary care physician physical and mental health: results from the Physician Worklife Study. *Health Services Research*. 37(1), pp. 121-143. Reference Source

Yeager, D. S. and Dweck, C. S. (2012) Mindsets That Promote Resilience: When Students Believe That Personal Characteristics Can Be Developed. *Educational Psychologist*. 47(4), pp. 302-314. Reference Source
Balakrishnan Nair  
Centre for Medical Professional Development and University of Newcastle

This review has been migrated. The reviewer awarded 4 stars out of 5

This is a very timely article. The Covid 19 epidemic highlighted may stressors for health care professionals. Most of the academic articles are on how to look after patients. But who looks after the health care professionals? As the authors point out there is compassion fatigue and the individual clinician and the system should work together to look after the well being of the clinician. This in turn will make the patients and the system much better.

Competing Interests: No conflicts of interest were disclosed.

Balaji Arumugam  
TAGORE MEDICAL COLLEGE AND HOSPITAL

This review has been migrated. The reviewer awarded 4 stars out of 5

This study was done with the background of understanding the well being of health-workers is an issue and highlighted the urgent need for a model of well being in the health workplace. The authors have done a beautiful integrated model with the help of ROL on 136 studies examining reviews of
psychological resilience, compassion fatigue and professional burnout. They succeeded with the model demonstrating in Figure – 5 – Showing Be, Believe, Feel, Do, Interact, Adapt - The domains of learning are represented as moving in increasing circles from the personal to the social. A model of learning to be well in the workplace in response to stress with the final model focusing on Physical environment, Appraisal environment and Learning environment. The need of the hour especially in the midst of COVID pandemic the health workers are under tremendous stress and burn out has became common among all the health care workers. The individual level model was well explained but the organisational level adaptations and challenges towards the health care workers was given lesser importance in this review. ANYWAY CONGRATS TO THE AUTHORS FOR THE GOOD REVIEW ARTICLE.

**Competing Interests:** No conflicts of interest were disclosed.

Reviewer Report 14 February 2021

https://doi.org/10.21956/mep.18850.r26870

© 2021 Shankar P. This is an open access peer review report distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

P Ravi Shankar
American International Medical University

This review has been migrated. The reviewer awarded 4 stars out of 5

Thank you for the invitation to review this interesting manuscript. The authors try to develop an integrated model of well-being in the health workplace. The methodology is well described though some of the technics used during the search and data synthesis may require more explanation. I am interested in knowing more about forward and backward snowballing. Taking the perspective of a general reader of the journal some of the concepts and discussions may need greater explanation. Supplementary file 1 is useful and the article proceeds from an assumption that most readers will be familiar with the concepts described. This may or may not be true for these interdisciplinary areas. Some basic information has been provided in the supplementary file. Complexity, systems thinking, resilience, well being are becoming important, and as the authors highlight the ongoing coronavirus pandemic has focused attention on these issues. The article may require repeated reading and careful reflection. The charts and figures are useful to better understand this complex topic.

**Competing Interests:** No conflicts of interest were disclosed.