

SYSTEMATIC REVIEW

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VUCA in the present-day health workplace and the mental health and wellbeing of health care workers: a systematic scoping review

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Abstract

Background The health workplace is fraught with fluctuations and uncertainties, creating a volatile, uncertain, complex, and ambiguous (VUCA) environment, particularly impacting frontline healthcare workers (HCWs) and leading to an epidemic of stress, burnout and health issues, exacerbated by the COVID-19 pandemic.

Objectives This paper aims to explore the multifaceted aspects of HCWs wellbeing, address challenges arising due to COVID-19 and VUCA and highlight innovative approaches within health systems to enhance the quality of life HCWs.

Methods A systematic review was conducted using PubMed and Scopus with search terms including 'VUCA,' 'health personnel,' 'frontline healthcare workers,' and 'psychological wellbeing.' Grey literature focusing on Australia and Nigeria was also included. Search was limited to titles on "COVID-19", articles published in English, and articles published from inception to 11th March 2024.

Findings Initial search terms generated hundreds of thousands of literatures but after limitations to titles on COVID-19, 32 articles were screened and 22 selected for critical review. Seven other grey articles were included with focus on Australia and Nigeria. The summary findings indicate the disruptiveness of VUCA, and associated need to improve healthcare workers' resilience and this calls for further research.

Conclusion This report highlights the further need to explore the volatile, uncertain, complex and/or ambiguous health workplace with a view to improve healthcare workers wellbeing. Intentional organizational support strategies along with personal coping strategies should be further explored towards improving HCWs resilience and wellbeing.

Keywords Ambiguity, Burnout, Complexity, Pressure, Resilience, Stress, Uncertainty, Volatility, Wellbeing

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Introduction

The sustainable development goal 3 aims to ensure healthy lives and promote well-being for all at all ages [1]. However, to achieve this, there is also the need to have a healthy and robust workforce to support this function. It therefore means that the health and wellbeing of HCWs must be given adequate attention. This is because occupational stress among HCWs has become prevalent and thus an issue of great concern [2]. This is due to the fact that the health workplace is a dynamic work environment and as such work conditions are stressful, unpredictable and demanding for health care workers [3]. As a result of this, the health workplace has been identified to be a volatile, uncertain, complex, and ambiguous (VUCA) workplace [4]. VUCA is used to describe situations of persistent unpredictability, complexity and uncertainty prevalent in certain industries and workplaces [5].

In recent times, spanning the last decade the level of VUCA in the health workplace had maintained a steady increase and is presently declared to be higher than usual [6]. This heightened VUCA level in the health workplace has been compounded by factors that increase the pressure in the health workplace like the recent COVID-19 pandemic [7]. The existence of VUCA in the health workplace affects the level of pressure in the workplace because of its disruptive nature and contributes to a complex relationship between increased workplace pressure and increase in burnout which impacts employee health and wellbeing. Employee wellbeing covers physical, emotional, financial, and mental health, influenced by work environment, workplace policies, resources and relationships, resources [8]. VUCA increased at a very alarming level during the COVID-19 pandemic and Global health, including the health workplace still feel the impact till today.

Volatility level in the healthcare work environment increased during the COVID-19 pandemic as there was rapid unexpected spread and fatality of the virus leading to an increasingly sharp upsurge in the number of patients needing medical care and attention [9]. Constant mutation in the variant of the causative virus of the COVID-19 caused a high level of unpredictability in the health work environment and this also impacted the level of volatility [10].

Uncertainty in the health workplace was heightened as HCWs were working under highly unpredictable circumstances, there was difficulty in following previous treatment models due to continuous mutation of the causative virus of the COVID 19 [11, 12], uncertainty over appropriate ways to attend to patients, health, family, financial situation, and job [13].

The level of Complexity was also affected as there was increased intricacies and complexity in managing the pandemic due to increase in severity as a result

of the rapid transmutation and spread of the virus, and limited availability of information [14]. The health workplace thus became more complex as HCWs had to work under the pressure of managing the rapidly evolving disease, managing other patients with diverse health challenges, meeting up with medical innovations and ensuring that they did not get infected or become means of transmission.

The level of Ambiguity was elevated as there was a situation of unclarity about the epidemiologic fluctuations of the virus and the most effective means of controlling the rapid spread [15].

All of these led to an unprecedented high level of stress on the HCWs as they had to contend with shortage in staff due to infection, absences due to fear of infection, increased workload, anxiety from fear of getting infected and transmitting same to their loved ones.

Some HCWs left their jobs due to other underlying health issues, while some others left due to COVID-19 related issues or fear of contagion. Some missed work on sick leave due to recovery from COVID-19, while some others were due to stress, burnout and mental health challenges [16]. There was shortage in availability of HCWs and an increased need for health care services, and as a result, HCWs engaged in longer hours of work under heavy workload and high VUCA conditions. Social distancing requirements created a loss in routine and increase in work pressure and stress. HCWs had to work under intense pressure managing their normal patient workload, along with the additional patient load from the sudden surge in COVID-19 cases and these led to increased stress and burnout.

As a result of these increased occupational stressors, HCWs began to experience unique, multiple challenges which created higher pressures leading to stress, anxiety, health issues and burnout among HCWs [17, 18]. Work-related pressure has been identified as one of the causes of work-related risk in the health workplace which exposes HCWs to various elements of harms [19]. As a result, work safety analysis is important in promoting occupational safety in the health workplace. This is because the health workplace are affected by diverse work-related risks [20]. Even though it is a well-known phenomenon that HCWs undergo a high level of workload, pressure, stress and burnout due to the nature of their job and responsibilities, however, this has been exacerbated by the prevailing high VUCA conditions due to COVID-19 pandemic [21].

HCWs have come under particularly intense work environments that are directly and indirectly placing them under unusually stressful conditions and creating a long-term mental, and emotional health implications as well as recruitment and retention crisis [22]. This overwhelming situation led to mass exodus of HCWs from the industry

[23] as some HCWs outrightly quit or retired [24], some migrated while some others completely changed careers [25]. Overall, this has led to chronic shortage of HCWs globally.

VUCA and its impact on the health workforce

Health systems and organizations will be in jeopardy without healthy workforce. Research of this nature is therefore important to look into causes of health distress in the health workplace, and its impact on the health workforce's health and wellbeing, with a view to address the challenges. One of the identified impacts of COVID-19 in the health workplace is the continuous shortage of HCWs [26]. There is a very high continuous increase in employee turnover in the health workforce post the COVID-19 pandemic [25]. This shortage in the health workforce due to the COVID-19 pandemic has become a global issue of concern as such calls for urgent attention [27]. In response, there has been growing calls to address these challenges and there is a reasonable amount of research and literature to show the impact of VUCA in the business environment, but limited literature about the impact of VUCA in the health workplace. Even though previous research on the impact of VUCA in the workplace are important, however they do not help us to understand the implications of COVID-19 and VUCA on the health workforces' wellbeing. Better understanding of this will give room for provision of better support for HCWs health and wellbeing in times of VUCA.

Despite the rapidly increasing level of VUCA in the health workplace due to COVID-19, currently, there has not been any scoping review conducted to examine VUCA in the Present-Day Health Workplace and the Mental Health and Wellbeing of Health Care Workers to our knowledge. Thus, the purpose of this scoping review is to examine existing literature on HCWs' experiences due to elevated level of VUCA in the health workplace, identify its impact on the health workplace, and on the health and wellbeing of HCWs. This is with a view to explore strategies to foster stronger health systems and supportive health workplace to enhance quality of life of HCWs.

This paper looks at the challenges being faced by HCWs due to COVID-19 and VUCA and its impact on their health and wellbeing. The paper also explores strategies to enhance mental health resilience, manage stress, prevent burn-out, and foster a supportive health workplace. It will also highlight innovative approaches within health systems and best practices to enhance the quality of life of HCWs. This will also include reviewing approaches that can aid health systems and organizations promote resilience, implement organizational changes, and positively impact the wellbeing of health workforce.

Objectives

1. To highlight the health workforces' wellbeing, and challenges arising due to COVID-19 and VUCA,
2. To address these challenges, explore strategies, and highlight innovative approaches and best practices within health systems to enhance mental health resilience, manage stress, prevent burn-out, foster a supportive work environment to enhance the quality of life of HCWs.

Research questions

1. What are the prevailing health workforces' wellbeing challenges that arose in the health workplace due to COVID-19 and VUCA?
2. What innovative approaches and strategies can be explored based on practices within health systems, to address these challenges, enhance mental health resilience, manage stress, prevent burn-out, foster a supportive work environment, and enhance the quality of life of HCWs?

Methodology

This scoping review was conducted in accordance with the JBI methodology for scoping reviews. The Preferred Reporting Items for Systematic Review and Meta-Analysis extension for scoping reviews (PRISMA-ScR) guidelines was followed [28, 29]. This was purposely to identify studies that were screened, included and excluded in this review [30]. PRISMA-ScR helped to provide a guideline for development of protocol. A protocol detailing the methodology for the current review was registered in Figshare; Registration DOI- <https://doi.org/10.6084/m9.figshare.26827189>. Literature search was performed on the PubMed, and Scopus databases. Search terms were 'VUCA' and 'COVID' at the first instance, and the serial combinations of health personnel, frontline healthcare workers, and psychological wellbeing in the second instance. The criteria for selection of articles were based on their titles, abstracts, and content.

The search strategy used to explore these electronic databases employed a combination of words with the following keywords: "health personnel", "frontline healthcare workers", "health care-workers", "psychological well-being", "wellbeing", "VUCA", volatile*, uncertain*, complex*, ambig*, "health workplace", "health work-place". The articles were subsequently exported using EndNote citation manager. Booleans 'and/or' were employed in search process. The literature was reviewed independently by two authors (UN, CO). Differences were resolved through discussion and consensus.

The research was based on the following PCC scheme

- Population: Health Personnel.
- Concept: The consequences of VUCA in the health workplace as it relates to employee wellbeing.
- Context: Australia and Nigeria.

Grey data from the Health System Response Monitor regarding Global Health Workforce responses [31], along with data from academic and policy literature were also discretionally included. This was specifically with a view to provide a more robust review focus on Australia and Nigeria.

Data analysis utilized the following three methods. Firstly, the job demands-resources (JD-R) theory was used to understand job unique workplace demands, perceived stressors and burnout due to the COVID-19 pandemic [21]. Secondly, the theoretical framework of VUCA was used to discuss the HRM challenges as it relates to employee health and wellbeing in health services sector [22]. Thirdly, a critical descriptive analysis was used to translate the grey data from the Health System Response Monitor and other literatures.

Methodology analysis

On VUCA search, PubMed yielded $n=60$ while Scopus generated $n=33$. Limitations to titles on COVID yielded $n=17$ and articles eligible for selections for review are eight. Therefore, the second instance of search was initiated.

PubMed search yielded health personnel ($n>774000$) and limitation to frontline healthcare workers $n=4525$, and 279 titles screened. Scopus search yielded health personnel ($n>213000$) and limitation to frontline healthcare workers $n=1294$, and 286 titles screened. Thus, combined articles screened during the second search were ' $n=565$ ' and articles eligible for selection, including one duplicate, are 25. Summary of the PRISMA-ScR outcome (33 articles eligible for selection) is shown in (Fig. 1).

The study includes articles that met the defined eligibility criteria using the PCC framework as follows:

Participants

Inclusion criteria

- Studies involving health care workers.
- Articles reporting evidence on increased stress in the health workplace.

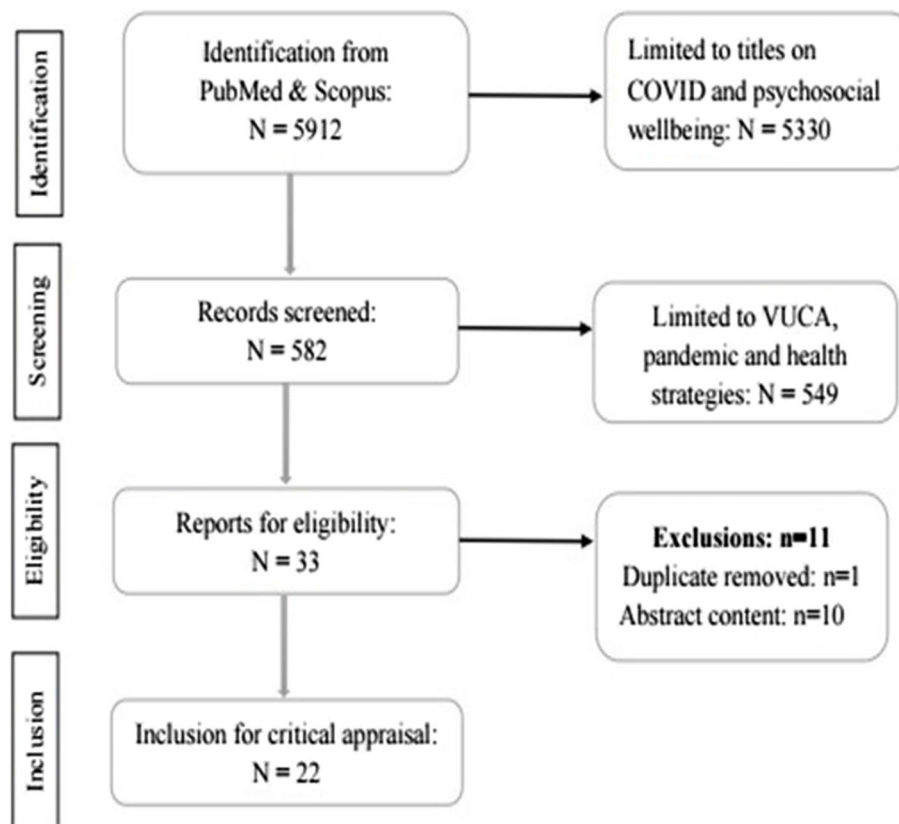


Fig. 1 Prisma flow chart of scoping review

- Articles reporting on innovative approaches within health systems to enhance wellbeing of HCWs.
- All study designs (interventional, observational, qualitative and mixed methods designs).
- Publications in English language and.
- Articles published from inception to the date of the last search.

Exclusion criteria

- Articles published in languages other than English.
- Full-text articles that cannot be found/accessed.
- Study settings outside the health workplace.

Concept

Inclusion criteria

- Studies involving consequences of VUCA in the health workplace.
- Studies involving HCWs wellbeing.
- Articles reporting evidence on increased burnout in the health workplace.
- Articles reporting on impact of COVID-19 AND VUCA on HCWs health and wellbeing.
- Articles on innovative approaches within health systems to build resilience and enhance wellbeing of HCWs.
- All study designs (interventional, observational, qualitative and mixed methods designs).
- Publications in English language and.
- Articles published from inception to the date of the last search.

Exclusion criteria

- Articles published in languages other than English.
- Full-text articles that cannot be found/accessed.
- Study settings outside the health workplace.

Context

Inclusion criteria

- Grey data regarding Global Health Workforce responses.
- Data from academic and policy literature health system responses.
- Focus on Australia and Nigeria.

Exclusion criteria

- Published in languages other than English.
- Full-text literature that cannot be found/accessed.
- Study settings outside the health workplace.

After screening the twenty-two articles used, only three of the articles related to the countries of interest which are Australia and Nigeria. This gave justification for grey narrative search. The quality of studies varied, although most were of moderate quality. All studies were published between 2020 and 2023. In most studies data were collected through cross sectional surveys, longitudinal survey, questionnaires, individual interviews or focus groups. Most participants were described as health personnel, healthcare workers, nurses, pharmacists, physicians or medical staff. A variety of analytical methods were used including correspondence factor analysis, multivariate data analysis, multiple logical regression, binomial logical regression, multivariate linear regression, qualitative content analysis, reflexive thematic analysis, however some of the papers did not specify the method of data analysis used.

Findings

The findings can be summarized into three meaningful themes as provided in separate Tables 1, 2 and 3. First is the employment of organizational and self-care strategies (Table 1) [32]. Second is organizational interventions and self-care strategies and third is strategies to promote wellbeing. All of these are geared towards empowering the HCWs [33], enhance their self-efficacy and coping strategies [34] and improve their adaptive coping skills and resilience [35]. There is also emphasis on the fact that health workplaces need to discard organizational mindset of leaving the charge of stress management and resilience building as the sole responsibility of HCWs (Table 2) [36]. Also, there is a fundamental need to adopt the building of institutional and individual resilience strategies to help manage this crisis of burnout in the health workplace (Table 3) [37].

These three summary themes focus on diverse strategies, which can further be translated into the well-being management strategy. The perspective of well-being management strategy then enables the consideration of other strategies including communication, management connection with staff, practical support, and workload (Fig. 2).

Organizational leadership have very important part to play in the entrenchment of organizational wellbeing oriented culture [36, 39]. It is recommended that organizational leadership styles that personify visibility, availability, and careful planning with clear, consistent, and transparent communication of policies that promote

Table 1 Studies examining organizational support and self-care strategies

S/N	Author, Year	Study Design	Findings/Recommendations
1.	(Neil-Sztramko et al., 2023)	Systematic Review	Psychotherapy and psychoeducation had strong effects on decreasing several negative mental health outcomes with psychotherapy being more effective. A combination organizational, along with personal intervention strategies.
2.	(Buch-Vicente et al., 2022)	Observational, descriptive, cross-sectional study	Tested coping strategies that can be used by health professionals are: a) problem solving, b) desiderative thinking and c) social support.
3.	(Oancea et al., 2023)	Cross sectional Observational Study	Organizations should develop strategies to standardize workload as a means of long-term preservation of health. Physician and organizational directed interventions are effective for reducing burnout in physicians, but organizational level interventions are deemed to have more positive impact.
4.	(Sani et al., 2022)	Cross Sectional study	Health care organizations should implement empowering supportive interventions towards empowering the healthcare workforce. Future intervention strategies should be oriented to empower emotional support in healthcare professionals.
5.	(Frenkel et al., 2022)	Cross sectional Observational Study	To tackle work stressors, healthcare professionals need sector-specific psycho-social support within and outside the workplace that reduces their stress responses and protects their mental health, well-being, and functioning. It is important for healthcare professionals to identify and enforce individual positive coping strategies
6.	(Zhou et al., 2021)	Longitudinal	Organizational support in enhancing self-efficacy and increasing the usage of problem-focused coping strategies is important.
7.	(Hossain & Clatty, 2021)	Commentary	Adoption of self-care strategies to help combat the moral injuries and support them through difficult times was recommended. Developing moral resilience, self-stewardship which include "rewiring the brain," ethics education, hospital education, and organizational support was also recommended
8.	(Finstad et al., 2021)	Narrative Review	Organizational interventions should be aimed at improving adaptive coping skills, resilience and the PTG of employees
9.	(Halayem et al., 2020)	Letter to Editor Web-based Survey	High score of stress among female and young physicians in training. We found that a high level of stress was positively correlated with social support and resolving problems, and negatively with avoidance.
10.	(Halms et al., 2023)	Qualitative Study	Health organizations should promote a more open approach to mental health challenges by addressing HCWs approach towards mental health challenges and ensuring anonymity. Options for interventions and improvement of working conditions should be constantly reviewed.
11.	(Heath et al., 2020)	Narrative Review	To help manage the psychological impact of crisis on healthcare workers, organizational and personal self-care strategies can be employed along with strategies like mindfulness interventions; battle buddies; and staff feedback sessions.
12.	(Jahangiri et al., 2021)	Cross Sectional Study	Health organizations should provide effective strategies toward the improving the mental health and wellbeing of HCWS through provision of counselling services, occupational health education and awareness creation programs
13.	(Smallwood et al., 2021)	National Cross-sectional survey	Provision of psychological support services at all times with greater access in times of crisis. Targeted outreach services that address maladaptive coping strategies and overcome resistance or inability to access support services by at-risk groups and occupations are urgently needed to protect the frontline health workforce.

employee wellbeing should be encouraged in the health workplace [40]. Management should encourage positive and open communication between managers and subordinates in the health workplace with managers showing empathy and providing emotional support where necessary (Table 2) [41].

There is need for organizations to provide more psychological support to HCWs through employee assisted programs, counselling services provided by trusted and acceptable providers, peers, and managers [40–42]. Occupational health units should be established as well to help provide therapy, occupational health awareness and education [43].

Research showed that psychoeducation and therapy helped greatly in reducing the psychological impact experienced by HCW due to work induced stress in times of emergency (Table 1) [44]. To help reduce burnout, it is

suggested that organizations should consider strategies that help regulate work load management as a means promoting employee health and wellbeing [45]. HCWs are also encouraged to adopt self-care and coping strategies to help manage the impact of disruptions and stress (Table 1) [46]. Some recognised coping strategies that can be explored by HCWs are social support, desiderative thinking and problem solving [47]. Organizations should adopt more open approach to addressing mental health challenges faced by HCWs [48]. Sector specific psychosocial support within and outside the health workplace should be explored to help promote the health and wellbeing of HCWs [49].

On the grey literature, empirical review was focused on Australia and Nigeria. The documents selected and reviewed were two on Australia [50, 51]; and there is a relationship between the VUCA and elevated stress in

Table 2 Studies examining issues on health systems responses and leadership

S/N	Author, Year	Study Design	Findings/Recommendations
1.	(Kua & Lee, 2021)	Cross Sectional study	Public health policies should emphasise the need for technical, regulatory, and financial support from the government to improve protection of healthcare workforce and their communities against infectious disease
2.	(Munawar & Choudhry, 2021)	Qualitative Inquiry (semi-structured interviews)	Health systems strengthening should be promoted by providing frontline HCWs with essential information about available mental health services to improve their self-esteem, resilience, and capability to respond to pandemics. Launching of massive and prolonged public awareness programs to improve the information of the general population, aiming on modes of transmission, and situation-specific preventive strategies along with tackling mistrust, myths, and misconceptions was also recommended
3.	(Oyat et al., 2022)	Narrative Review	Health authorities to consider setting up permanent multidisciplinary mental health teams at regional and national levels to deal with mental health issues and provide psychological support to patients and HCWs, always supported with sufficient budgetary allocations
4.	(Ralph et al., 2022)	Qualitative (Semi-Structured Interviews)	Leadership styles that embody visibility, availability, and careful planning with clear, consistent, and transparent and communication of policies related to sick leave, pay equity and workload. A more resilient healthcare supply chain was required to safeguard the distribution of equipment, supplies and medications. More psychological support offered by trusted providers, managers, and peers.
5.	(Engelbrecht et al., 2021)	Cross Sectional Survey	Emotional support and empathy from their managers are needed. Emotional, psychological, and debriefing intervention sessions that focus on positive coping strategies to actively address stress. Positive and open communication between managers and their subordinates should be encouraged. Health workplaces should provide psychological support through the Employee Assistance Programme and occupational health units with more intensive psychotherapy where necessary. Uninterrupted supply of quality PPE were recommended.
6.	(Vazirnia et al., 2023)	Qualitative (Interviews and focus groups)	Health organization should jettison the archaic organizational mindset of placing responsibility of self-resilience and stress management, on the HCWs. Culture of wellness and effective implementation procedures must be fostered in the health workplace to help manage stressors in the health workplace. Organizational leadership has a key role to play in establishment of organizational well-being-oriented culture

Table 3 Studies that looked at the impact of VUCA in the health workplace and strategies to promote wellbeing

S/N	Author, Year	Study Design	Findings/Recommendations
1.	(Sugiyatmi et al., 2023)	Review/Editorial	Health care disruptions cause VUCA which leads to stress and burnouts. A such there is great necessity to help doctors build individual and institutional resilience
2.	(Maini et al., 2020)	Commentary	Coaching training should be incorporated into the medical curriculum and continuing professional development, to support the health workforce develop practical knowledge and skills to help shape a way forward through the challenges being experienced in an increasingly VUCA health-care climate
3.	(Temseh et al., 2022)	National Cross-Sectional survey	There is an inverse relationship between resilient coping and stress which emphasizes the importance of studying these constructs in times of crisis.

the health workplace. It was found that support systems and good supportive leadership in the health workplace can help create enabling environment in the health workplace for the health workers.

Further, there is reported impact of over 50% of the healthcare workers reporting burnout and 40% of them



Fig. 2 Strategies for improvement of healthcare workers mental health and well-being [38]

considered quitting their jobs [51]. More specifically, severe depression was reported to be 10 times higher than in general population.

Empirical data from Nigeria show two main information including well-being index of female doctors being 69.90 and below their male counterparts (the World Health Organization (WHO-5) wellbeing index was included in the questionnaires used and analysed) [52],

and epidemiological data indicating average of 3 deaths out of every 255 COVID-19 cases [53].

In the consideration of strategies for improvement, suggestion is that most effective strategy is preventive mechanisms (Fig. 2) [50]. This opinion is corroborated by the reviewed papers from Nigeria, such as suggestion of regular psychological support for employees by employers [52], issues of finance, medical equipment and technology to respond to changes in workload [54], and collaboration with other sectors to strengthen any potential weakness [53, 55].

Discussion

The background of the research is boosted by reviewing some of the relevant literature, theories, and models in the areas of the experiences of frontline health care workers in the present-day health workplace, the impact of VUCA on employee mental health and wellbeing and how such experiences can be managed for better future outcomes. Researchers have established a relationship between employee performance and employee wellbeing [56, 57]. This show that the wellbeing of HCWs have an impact on professional performance of health workers, quality of health service delivery, staff retention, and patient outcomes [58].

What are the prevailing health workforces' wellbeing challenges that arose in the health workplace due to COVID-19 and VUCA?

Health care workers have from time immemorial work under challenging conditions. In the course of their jobs, they are exposed to patients passing through intense pain, sickness and sometimes death; long hours of work taking care of other human beings under these stressful conditions (sometimes to the detriment of their health). These stressful work conditions are further exacerbated by factors like health crisis or pandemics where health workers work under conditions that expose them to serious health risks, harm, and hazards where they are at high risk of contracting contagious diseases. The COVID-19 pandemic brought so much global crisis (health, social, psychological, financial), that the level of VUCA especially in the health workplace was declared very high globally [59]. The global lockdown brought to the fore, the responsibility reposed on HCW especially in time of crisis and disruptions, the exposures they encounter, the challenges they face, the sacrifices they make even to the detriment of their health, lives and families and the stress they go through [37]. Research carried out showed that HCWs experienced higher stress due to underlying intolerance of uncertainty as a result of the COVID-19 pandemic [12].

In recent times the emotional and mental health and wellbeing of health care workers has generated a whole

lot of global attention [60]. It has become a major public health concern and threat to professional performance of health workers, quality of health service delivery, staff retention, and patient outcomes [58]. This is due to the increased work pressures and unique stressors placed upon HCW by the rapid unpredictability that characterizes the health workplace, and the heightened level of vulnerability, uncertainty, complexity and ambiguity in the industry in recent times exacerbated by the COVID-19 pandemic [4, 61, 62].

The elevated COVID-19 induced VUCA level in the health workplace has created a new kind of stressor impacting negatively on the mental health and well-being of health care workers. This is due to work burnout as HCWs are now experiencing higher level of pressure, anxiety and stress triggering a range of psycho-social and health-related issues like depression, poor mental health [37]. Studies show that there was a higher level of stress on female HCWs due to the COVID-19 pandemic [63].

Volatility

The health workplace is deemed volatile due to the rapid unpredictability that characterizes the environment [64]. This is partly because of the high volume health challenges, infectious, and non-infectious diseases which they have to treat and manage each day; emergence of new pathogens and infectious diseases and its unpredictability; and exposure of HCWs to these diseases [62]. Fluctuation of patients' needs, and rapid changes in medical advancement to meet these needs also add to its volatility [61]. The Covid-19 pandemic exacerbated the volatility in the health workplace and compounded the stress level of health care workers [65, 66].

Prior to the COVID-19 pandemic, stress level of health care workers in Australia was reported to be moderate to high levels of burnout and stress [67, 68] but following the COVID-19 pandemic, health care workers came under immense pressure to manage and mitigate the spread of the disease, not just putting themselves in the fore front but also putting them at higher risk of contracting the virus in comparison to the general population [69]. They also had to contend with frequent and rapid changes in the workplace along with the risk of transmitting the virus to their family members [70].

Studies carried out showed that some of the major causes of increased stress among HCWs during the COVID-19 pandemic included fear of being infected or their colleagues getting infected due to the rapidity of spread and impact [71], increased workload as they had to work extra hours and under intense pressure [72], interference to their personal, family and social lives [66], fear of infecting their families and loved ones [65], financial worries due to lockdown of economy [73], fear of unknown [7], having to cope with the pressure of going

to work while every other persons were at home. Some HCWs also had underlying health issues which they had to manage along with the whole new stress. Increased stress among healthcare workers due to the COVID-19 pandemic was reported globally, and studies, including ones conducted in Australia [66] and Nigeria [65, 73] showed that healthcare workers experienced increased stress.

Uncertainty

The health work environment is also characterized by uncertainties. Uncertainty refers to “a situation characterised by a lack of knowledge, not as to cause and effect but rather about whether a certain event is significant enough to constitute a meaningful cause” [74]. Health epidemics which are unpredictable in nature (like the COVID-19 pandemic) create severe health and economic uncertainties [75]. The COVID-19 pandemic placed so much demands on the health care workers who worked under uncertain conditions as it relates to their health and safety [72]. Contemporary innovations in the health care industry also creates some level of uncertainty in the health workplace as each innovations comes with its own uncertainty and change(s) to the status quo in existing protocols and process [76] the unpredictability of emerging infectious disease pathogens is another difficult uncertainty encountered by health care workers in the workplace [77]. Research has established a nexus between uncertainty in the workplace and adverse mental health consequences [78], and has also shown that uncertainty in the health workplace could lead to elevation of stress level and thus impact employee wellbeing [79].

Complexity

Complexity in a VUCA environment refers to situations of uncertainties that arise as a result of intricacies from interplay of diverse factors and issues resulting to intricate complications [80]. The health workplace is inherently complex as it involves managing diverse patients, diseases, health challenges, treatment plans, diverse stakeholders and meeting up with advancing medical innovations. Ambiguity in the health workplace refers to a situation of unclarity. The effect of complexity and ambiguity on the wellbeing of HCWs in the workplace is quite enormous as research has shown that it causes elevated stress to health care workers [78, 80].

Ambiguity

Healthcare workers (doctors, nurses, allied health professionals, support workers) are exposed to multiple stress factors within their work, which may impact their physical, mental, and emotional well-being in negative ways [64]. The pandemic necessitated innovative work practices such as telemedicine, remote monitoring, and

online consultations however, there are reports of tele-health' fatigue [81].

The impact of the COVID-19 pandemic, innovative work practices, treatments, and new technologies on the healthcare workplace experiences of frontline HCWs and health service management has been significant. While the specific impact can vary based on various factors including healthcare infrastructure, government response, and socioeconomic conditions, there are some common trends and challenges that remain universal. For example, frontline health care workers faced increased workloads and stress due to the surge in COVID-19 cases. The demand for healthcare services stretched the existing workforce, leading to long working hours and burnout [58].

Workforce shortage

Prior to the advent of the COVID-19, many countries were experiencing shortage of HCWs especially nurses. However, these staffing gaps were further exposed by the demands of the COVID-19 on the health workplace which further exacerbated the staff shortage [82]. The high level of VUCA that came with the pandemic [21], placed a huge demand on the health workforce. Staff also had to manage stressors such as overtime (both paid and unpaid), infection risk, and work intensification; as well as constant fear of contracting the virus and possibility of transmitting same to their families and loved ones [83]. All these had a significant impact on the physical, social, and psychological wellbeing of these HCWs especially the frontline HCWs who mostly dealt directly with the patients.

Due to the intensity of work, increase in workload and long hours, HCWs experienced job burn-out, some others had to be absent from work for long or short term due to health or some other reasons, some others had to retire or reduce their work hours, and all these definitely had an impact on the immediate and long term supply of HCWs and nurses [72]. Some even quit their jobs due to fear of getting infected.

Workforce Challenges has been a major cause of stress among health care worker [84]. There are acute workforce shortages now due to attrition rates which has an impact on workload, patient care and employee wellbeing [85]. According to a research by the Deakin University Institute for Health Transformation, “the COVID-19 pandemic had and still has a continuous impact on health services in Australia and the world at large [7, 86] The research however suggested further study to determine the psychosocial effects of the pandemic on HCWs, especially nurses and midwives who form the major part of Health work group having direct contact with patients” [7].

What innovative approaches and strategies can be explored based on practices within health systems, to address these challenges, enhance mental health resilience, manage stress, prevent burn-out, foster a supportive work environment, and enhance the quality of life of HCWs?

At the height of the COVID-19 pandemic, the European Observatory on Health and Policy, (a coalition established in 1998 to help European member states cross fertilize ideas on policy perspectives on health systems and policies to aid appropriate policy making) collated and organized data on country responses to the pandemic between the period of 2020 to early 2022. Its health system response monitor (HSRM) also collated documents on policy Responses to COVID-19. The health system response monitor (HSRM) documents on “Policy Responses to COVID-19” were screened using the thematic focus of interest, “wellbeing” and “workforce”. The key thematic documents selected and reviewed include:

1. Health System Responses to COVID-19.
2. Addressing backlogs and managing waiting list.
3. Strengthening the health systems resilience.
4. COVID-19 and the opportunity to strengthen health system governance.

Health system responses to COVID-19

How countries supported their health workforce during the COVID-19 was considered herein. Williams et al., (2020) looked at measures activated by countries to support their health workers in executing their duties during the COVID-19 pandemic. It was observed that some of the measures put in place to help health care workers manage their mental health and wellbeing under the immense pressure created by the pandemic included, mental health support structures like establishment of confidential employees support programme to offer private counselling and support to Health care workers, provision of psychologists and psychiatrists to provide mental health support to health workers, support of telework to enable health workers work from home and have time with their families where possible, and financial motivation [87].

However, it was observed that there was no measure to show the effectiveness of these explored options. It was thus suggested that evaluation be carried out to determine the effectiveness of the explored initiatives with a view to aid creation of appropriate policy, strategies and responses to future crisis for protection of the health workforce [87].

Addressing backlogs and managing Waiting List

This is a policy brief report. The major focus was on addressing the backlog of non-emergency medical procedures that were put on hold due to the severity of the COVID-19 pandemic which caused a build-up of backlogs in almost all countries. There was more focus on building professional competencies, productivity, and capacity towards meeting up and overcoming the backlogs. The importance of appropriate mental health support and suitable work conditions for health workers was also briefly addressed and it was recommended that policies to protect health workers and support their health and wellbeing should be employed *pari passu* with policies to address the issue of backlog [88].

Strengthening the Health systems Resilience

This policy report focuses on how health systems are able to establish appropriate structures to prepare for, manage, recover, learn from and cope with sudden disastrous events like the COVID-19 pandemic and global economic crisis. It also looks at how these structures are assessed and supported with the major aim of strengthening the health systems ability to prepare for, manage, and learn from the vulnerability, uncertainty, complexity and ambiguity that comes with such sudden disasters or catastrophic occurrences [89]. However, in all of these there was no reference to the key thematic words “workforce” and “wellbeing”.

COVID-19 and the opportunity to strengthen health system governance

Governance of health workforce responses in a time of crisis is considered herein [90]. Governance policies and responses to HCWs wellbeing are jointly considered here.

- a. National/regional governmental policies: Provision of substitute temporary housing for health workers to prevent spread of the infection to their families.
- b. Legislation: Legislations were enacted to ensure compliance with use of PPEs to reduce spread of infection.
- c. Regulations: These aided the creation support services for mental health.
- d. Employment and management: This looked in the direction of leadership and training of managers towards acquiring psychosocial skills and putting in place appropriate psychosocial structures towards mental health and wellbeing support [90].

Public health policies should emphasise the need for technical, regulatory, and financial support from the government to improve protection of healthcare workforce and their communities against infectious disease [91]. Providing frontline HCWs with essential information

about available mental health services to improve their self-esteem, resilience, and capability to respond to pandemics and launching of massive and prolonged public awareness programs to improve the information of the general population, aiming on modes of transmission, and situation-specific preventive strategies along with tackling mistrust, myths, and misconceptions will go a long way to help strengthen health systems [92].

Establishment of multidisciplinary mental health teams at the state and national level to permanently provide psychological support to HCWs to help them manage stress and psychosocial challenges should be considered by health authorities [93]. Coaching training should be incorporated into the medical curriculum and continuing professional development, to support the health workforce develop practical knowledge and skills to help shape a way forward through the challenges being experienced in an increasingly VUCA health-care climate (Table 3) [94].

Brief focus on Australia and Nigeria

Australia was not part of Health systems response monitor but like other parts of the world, the COVID-19 pandemic heavily impacted its health workforce. In Australia as in other parts of the world, COVID-19 caused an increase on intensity, and weight of workload of front-line workers, which led to substantial negative mental health impacts on these frontline workers [50]. The level of workplace burnout of our front-line workers especially health care workers was very high due to emotional and physical exhaustion [51].

Research has shown that there is a strong link between employee wellbeing and productivity [95]. Studies have further shown that workers who have good physical and mental wellbeing tend to be more productive [96]. Shiri et al., observed that several workplace interventions have been found to be very effectual in improving employee health and wellbeing [97]. Employers have therefore been encouraged to inculcate wellness and mental health support programs for their staff to engage in to help them address not just their mental but physical wellbeing. This can help with cushioning and treating the social and psychological impact of VUCA on the employees [57]. Employees also need to ensure that their emotional, mental and physical wellbeing is taken care of as it is more beneficial to them.

In Nigeria, like in other parts of the world, COVID-19 significantly impacted the health workplace with consequent overwhelming of health care workers, facilities, and entire health care system [65]. The Nigerian government instigated urgent reforms to enable equitable distribution of medical care, whilst also curtailing the impact of the pandemic on patients and health care workers [71]. It has been argued that the emergency preparedness

of the Nigeria towards management of the Ebola virus outbreak informed the preparedness of Nigeria towards managing the COVID-19 outbreak and guided response [98]. Presently, Australia is experiencing chronic shortage of nurses occasioned by COVID-19 pandemic [99], but in Nigeria, a school of thought holds the view that the Nigeria health sector may fare better as a result of the pandemic, because the situation has forced the Nigerian government to invest in strengthening the health sector [100].

One fundamental difference between Australia and Nigeria is the former is a developed country unlike the latter being developing nation. However, the observation from this review (Fig. 2) shows that the concern for, and strategies to improve the mental health and well-being of their healthcare workforce are relatively the same [38, 52, 53, 55]. Although, emphasis on funding and collaboration seem more needed in Nigeria [54].

Conclusion

Some of the most effective mental health interventions are practical and preventative. Providing additional workplace mental health wellbeing programs and support is helpful. However, the data suggests the most effective workforce wellbeing strategy is to prevent the major sources of psychological distress. Leaders of organisations should address these areas as a priority. There is need to support the health workforce develop practical knowledge and skills to help shape a way forward through the challenges being experienced in an increasingly VUCA health-care climate.

Employees should also be encouraged to explore other social support systems outside the workplace to help maintain their overall mental health and wellbeing. Mental health and wellbeing challenges in the health workplace is an ongoing issue of concern. However, most of the strategies looked at above were used in times of crisis to give respite to the worker but as an ongoing challenge, more viable long-term solutions will be required. There is need for further research to determine the psychosocial effects of VUCA on HCWs, especially frontline HCWs who majorly have direct contact with patients in times of pandemics.

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Authors' contributions

CO and EUN conceptualized the study, CO designed and wrote the drafts for the study which includes the background, objectives, methods, findings, and conclusion. GB, RK and EUN substantively revised it. All authors contributed to substantive manuscript revision, read, and approved the submitted version.

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