



BMJ Open Women in healthcare experiencing occupational stress and burnout during COVID-19: a rapid review

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ABSTRACT

Context COVID-19 has had an unprecedented impact on physicians, nurses and other health professionals around the world, and a serious healthcare burnout crisis is emerging as a result of this pandemic.

Objectives We aim to identify the causes of occupational stress and burnout in women in medicine, nursing and other health professions during the COVID-19 pandemic and interventions that can support female health professionals deal with this crisis through a rapid review.

Methods We searched MEDLINE, Embase, CINAHL, PsycINFO and ERIC from December 2019 to 30 September 2020. The review protocol was registered in PROSPERO and is available online. We selected all empirical studies that discussed stress and burnout in women healthcare workers during the COVID-19 pandemic.

Results The literature search identified 6148 citations. A review of abstracts led to the retrieval of 721 full-text articles for assessment, of which 47 articles were included for review. Our findings show that concerns of safety (65%), staff and resource adequacy (43%), workload and compensation (37%) and job roles and security (41%) appeared as common triggers of stress in the literature.

Conclusions and relevance The current literature primarily focuses on self-focused initiatives such as wellness activities, coping strategies, reliance of family, friends and work colleagues to organisational-led initiatives such as access to psychological support and training. Very limited evidence exists about the organisational interventions such as work modification, financial security and systems improvement.

INTRODUCTION

The health sector is facing an unprecedented burden due to the ongoing COVID-19 pandemic. Healthcare workers (HCWs) are at the frontline providing essential services, and they are experiencing increased harassment, stigmatisation, physical violence and psychological trauma, including increased rates of burnout, depression, anxiety, substance abuse and suicide due to COVID-19.^{1–4} Amnesty International has recorded the deaths of over 7000 health workers worldwide due to COVID-19. In the USA alone, over 250 000 health workers have been infected, and nearly 1000 deaths have occurred.^{5 6}

Strengths and limitations of this study

- This rapid review included 47 studies representing 18 668 women in healthcare.
- This study used Bolman and Deal's (2017) four-frame leadership model to explain the contextual factors of stress and burnout experienced by women health professionals.
- This study used the WHO guidelines on rapid reviews and reported using the Preferred Reporting Items for Systematic Reviews and Meta-Analyses guidelines to guide this rapid review.
- Quality of evidence was assessed using the Quality Rating Scheme for Studies and Other Evidence.
- Due to the heterogeneity of data collected in the included studies, a meta-analysis was not appropriate.

Women in healthcare experience specific challenges with adapting to COVID-19 related public health measures, in addition to the pre-existing systemic challenges related to workplace gender bias, discrimination, sexual harassment and inequities.⁷ The pandemic has taken a disproportionate toll on women in the workplace.⁸ Women make up 75% of HCWs globally.⁹ Female physicians are already more likely than male physicians to experience depression, burnout and suicidal ideation.^{10 11} On average, women performed 2.5 times of unpaid work per day compared with men as parents and primary caregivers to family members.¹²

In this review, we explore factors that may influence stress and burnout in women health professionals and describe how different type of intervention organisations can offer to support women health professionals.

METHODS

Overall objectives

The overall objectives of this review are to: (A) explore the triggers of occupational stress and burnout faced by women in healthcare during the COVID-19 pandemic and (B)

identify interventions that can support their well-being through a systematic review.

Materials and methods

We conducted a rapid review in accordance with the WHO Rapid Review Guide¹³ and reported using the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA). The review protocol was registered in PROSPERO and is available online (CRD42020189750).

Ethical considerations

This study used secondary data analysis using published research; therefore, it did not require submission to the research ethics committee.

Theoretical model

The WHO classified burnout and occupation stress as an occupational phenomenon.¹⁴ In this context, we used Bolman and Deal's (2017) four-frame model of leadership to understand the stress and burnout experienced by women health professionals.¹⁵ The four-frame model provides an approach to describe organisational issues through four perspectives: structural, human resource, symbolic and political. The structural frame focuses on rules, roles, strategy, policies, technology and work environment. The human resource frame considers individual needs, skills and relationships. The political frame examines power, conflict, competition and organisational politics, and the symbolic frame includes culture, meaning, rituals and stories.

Research questions

The following research questions guided the rapid review: what are the triggers of stress and burnout in women in healthcare? What interventions are effective in preventing occupational stress and burnout?

Eligibility criteria

The eligibility criteria are included in [table 1](#). First, we were only interested in articles published from December 2019 to 30 September 2020 (the last day of the literature search). We chose this timeframe to include research related to experiences during the COVID-19 pandemic. Our study specifically focused on the experiences of women in healthcare, encompassing a broad array of health professionals including doctors, nurses, pharmacists, midwives, paramedics, physical therapists, technicians, personnel support workers and community health workers. We only included articles that focused primarily on women in healthcare or that provided a breakdown of data according to sex/gender. Given the transboundary nature of the COVID-19 pandemic, we included articles published globally. We defined occupational stress as the degree to which one feels overwhelmed and unable to cope as a result of unmanageable work-related pressures, and we defined burnout as the experience of emotional exhaustion, depersonalisation or cynicism, along with feelings of diminished personal efficacy or accomplishment in the context of the work environment.¹⁶ We

included primary where data were collected and analysed using objective quantitative, qualitative and mixed methods. We excluded editorials and opinion pieces.

Patient and public involvement

No patient involved.

Search methods and information sources

We conducted comprehensive literature search strategies in the following electronic databases: MEDLINE (via Ovid), Embase (via Ovid), CINAHL (via EBSCOhost), PsycINFO (via Ovid) and ERIC (via ProQuest). We developed our search strategies via an academic health sciences librarian with input from the research team. The search was originally built in MEDLINE Ovid and peer-reviewed using the Peer Review of Electronic Search Strategies tool.¹⁷ We limited our searches to articles published in English no later than 30 September 2020. The final search results were exported into Covidence, review management software, where duplicates were identified and removed.

Screening process

To minimise selection bias, we piloted 20 citations against a priori inclusion and exclusion criteria. After high agreement was achieved, two reviewers independently screened all citations. Conflicts were resolved by discussion or via a third reviewer. The same process was used for full-text screening of potentially eligible studies.

Rating of the quality of evidence

The strength of data and subsequent recommendations for interventions were graded according to the Quality Rating Scheme for Studies and Other Evidence by two reviewers independently, with discrepancies resolved after joint review and discussion.¹⁸

Data extraction

We used a predefined data extraction form to extract data from the papers included in the rapid review. To ensure the integrity of the assessment, we piloted the data extraction form on three studies. We extracted the following information from the studies: the first author, year of publication, health professionals enrolled in the study, geographic location, study methods, quality of evidence, triggers of stress and burnout, interventions and outcomes.

Data synthesis

Due to heterogeneity of data collected in the included studies, meta-analysis was not appropriate. Instead, we thematically synthesised the data using the thematic analysis process described in Clarke *et al* (2012) and grouped the triggers using Bolman and Deal's (1991) four frame model of leadership.¹⁹

RESULTS

Search results

The literature search resulted in a total of 6148 records. After 1606 duplicates were removed, 4542 records remained to be screened. We assessed 721 full-text articles and found 47

Table 1 Study characteristics

Authors (last name of first author)	Year	Evidence source		Health professionals					Sample size	Female participants (%)
		Country	Research design	Physicians	Nurses	Other				
Algunmeeyn	2020	Jordan	Qualitative	✓	✓	✓			30	23
Alsulais	2020	Saudi Arabia	Cross-sectional survey	✓					529	40
Cai	2020	China	Cross-sectional survey	✓	✓	✓			534	69
De Stefani	2020	Italy	Cross-sectional survey				✓		1500	56
Elbay	2020	Turkey	Cross-sectional survey	✓					442	57
Fargen	2020	USA	Cross-sectional survey	✓					151	14
Gao	2020	China	Qualitative		✓				14	93
Hoffman	2020	USA	Cross-sectional survey	✓	✓	✓			365	69
Kackin	2020	Turkey	Qualitative		✓				10	80
Kang	2020	China	Cross-sectional survey	✓	✓				994	86
Karimi	2020	Iran	Qualitative		✓				12	67
Khalafallah	2020	USA	Cross-sectional survey				✓		407	11
Lai	2020	China	Cross-sectional survey	✓	✓				1257	77
Li	2020	China	Cross-sectional survey	✓	✓	✓			4369	100
Liu	2020	China	Qualitative	✓	✓				13	62
Martinez-Lopez	2020	Spain	Cross-sectional survey	✓	✓				157	79
Moorthy	2020	UK	Cross-sectional survey	✓	✓				200	50
Mosheva	2020	Israel	Cross-sectional survey	✓					1106	49
Ng	2020	Malaysia	Cross-sectional survey	✓			✓		22	77
Nowicki	2020	Poland	Qualitative		✓				325	96
Nyashanu	2020	UK	Qualitative		✓		✓		40	53

Continued

Table 1 Continued

Authors (last name of first author)	Year	Evidence source	Country	Research design	Health professionals			Sample size	Female participants (%)
					Physicians	Nurses	Other		
Osama	2020	41	Pakistan	Cross-sectional survey	✓			112	40
Prasad	2020	42	USA	Cross-sectional survey		✓	✓	347	91
Rabbani	2020	43	Saudi Arabia	Cross-sectional survey	✓	✓	✓	398	40
Rodriguez	2020	44	USA	Cross-sectional survey	✓			426	45
Ruiz-Fernandez	2020	45	Spain	Cross-sectional survey	✓	✓		506	77
Rymarowicz	2020	46	Poland	Cross-sectional survey	✓		✓	304	31
Sandesh	2020	47	Pakistan	Cross-sectional survey			✓	112	43
Shah	2020	48	UK	Cross-sectional survey	✓			207	81
Shalhub	2020	49	International	Cross-sectional survey	✓			1609	29
Sharma	2020	50	USA	Cross-sectional survey	✓	✓	✓	1651	74
Shechter	2020	51	USA	Cross-sectional survey	✓	✓	✓	657	77
Si	2020	52	China	Cross-sectional survey	✓	✓	✓	863	71
Sil	2020	53	India	Cross-sectional survey	✓		✓	23	70
Stilczuk	2020	54	Poland	Cross-sectional survey	✓			117	53
Smith	2020	55	Canada	Cross-sectional survey			✓	5988	91
Spiller	2020	56	Switzerland	Cross-sectional survey	✓	✓		812	71
Stojanov	2020	57	Serbia	Cross-sectional survey	✓	✓		201	65
Suryavanshi	2020	58	India	Cross-sectional survey	✓	✓		197	51

Continued

Table 1 Continued

Authors (last name of first author)	Year	Evidence source	Country	Research design	Health professionals			Other	Sample size	Female participants (%)
					Physicians	Nurses	Other			
Tan	2020	59	China	Qualitative	✓	✓		30	80	
Temsah	2020	60	Saudi Arabia	Cross-sectional survey	✓	✓	✓	582	75	
Thomaier	2020	61	USA	Cross-sectional survey	✓			374	63	
Tsan	2020	62	Malaysia	Cross-sectional survey	✓			85	64	
Uvais	2020	63	India	Cross-sectional survey	✓			58	40	
Xiao	2020	64	China	Cross-sectional survey	✓	✓	✓	958	67	
Zhang	2020 a	65	Iran	Cross-sectional survey			✓	304	59	
Zhang	2020b	66	Peru, Ecuador and Bolivia	Cross-sectional survey	✓	✓	✓	712	68	

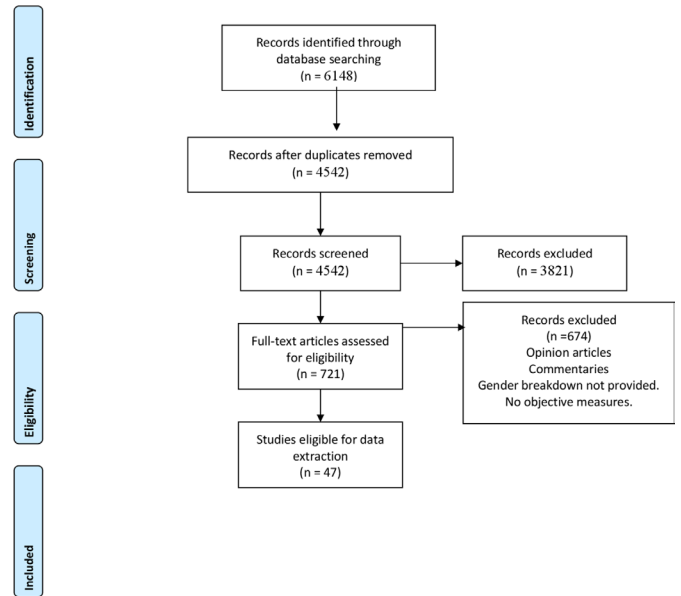


Figure 1 Flow diagram of article selection for further review and scoring.

published studies with 18 668 female health workers met our inclusion criteria. The PRISMA flowchart presents the selection of publications (see [figure 1](#)).

Characteristics of studies

Our search identified 47 eligible studies. Of these, 39 (83%) were cross-sectional studies and eight (17%) were qualitative studies. Studies came from Asia (34%), Europe (27.6%), Middle East (14.9%), North America (19.1%) and Latin America (2%) (see [table 1](#)). These studies focused on physicians (74%), nurses (57%) and other health professionals (45%; including dentists, personal support workers, pharmacists and administrative professionals). The study samples often included both male and women health professionals; however, these studies also provided gender-based breakdowns. In all, 62% of the total 29 398 study population focused on female health professionals.

Triggers of stress and burnout faced by women in healthcare

Triggers of stress and burnout were grouped using the Bolman and Deal’s (2017) four-frame model of leadership ([table 2](#)).

Primary forces of stress and burnout in women in healthcare during COVID-19 were related to structural factors (ie, organisational resources, work-related policies and roles).^{20–53} Resource adequacy (43%), related to lack of appropriate personal protective equipment (PPE) and staffing shortages, was discussed as a major driver of stress and burnout in the included studies. Stress and burnout intensity differed between health professionals who had indirect patient care and direct clinical care of patients with COVID-19. A total of 43% of the studies reported that caring for patients with COVID-19 increased stress and burnout; 38% of the studies reported HCWs faced an increased workload due increased number of patients



Table 2 Triggers of stress and burnout during COVID-19

Author	Year	Evidence source	Triggers		Human resources				Symbolic			Political				
			Structural	Staff and resource adequacy	Workload and compensation	Job roles and job security	Female gender	Age/family status	Safety	Experience	Patient care protocols	Societal expectations	Organisation culture	Public health guidance	Infrastructure	Pandemic preparedness
Aljunmeeyn	2020	20	✓						✓	✓						
AlSulais	2020	21		✓			✓		✓	✓						
Cai	2020	22	✓		✓		✓		✓				✓			
DeStefani	2020	23		✓					✓			✓				
Elbay	2020	24	✓		✓		✓		✓							✓
Fargen	2020	25	✓		✓				✓							
Gao	2020	26	✓		✓				✓							
Hoffman	2020	27								✓						
Kackin	2020	28	✓		✓		✓		✓							✓
Kang	2020	29			✓				✓							
Karimi	2020	30	✓		✓				✓							✓
Khalafallah	2020	31		✓					✓							
Lai	2020	32		✓			✓		✓							
Li	2020	33					✓		✓							
Liu	2020	34	✓		✓		✓		✓		✓					
Martinez-Lopez	2020	35	✓						✓							
Matthewson	2020	36			✓											
Moorthy	2020	37	✓		✓				✓							✓
Mosheva	2020	38							✓							
Hau Ng	2020	39		✓					✓		✓					
Nowicki	2020	40					✓		✓							
Nyashanu	2020	41	✓		✓		✓		✓			✓	✓			✓
Osama	2020	42							✓							
Prasad	2020	43			✓			✓								✓
Rabbani	2020	44	✓		✓				✓							
Rodriguez	2020	45	✓		✓			✓								✓
Rymarowicz	2020	46							✓							
Sandesh	2020	47	✓		✓		✓		✓							✓
Shah	2020	48	✓		✓		✓		✓							✓
Shahub	2020	49	✓		✓			✓								✓
Sharma	2020	50	✓		✓		✓		✓							✓
Shechter	2020	51	✓		✓		✓		✓							✓
Si	2020	52			✓				✓							

Continued

Table 2 Continued

Author	Year	Evidence source	Triggers		Symbolic											
			Structural	Human resources	Structural	Symbolic	Political									
			Staff and resource adequacy	Workload and compensation	Job roles and job security	Female gender	Age/family status	Safety	Experience	Patient care protocols	Societal expectations	Organisation culture	Public health guidance	Infrastructure	Pandemic preparedness	Social isolation
Sil	2020	53				✓										
Slezuk	2020	54				✓										
Smith	2020	55	✓							✓						
Spiller	2020	56		✓												
Stojanov	2020	57				✓		✓			✓					
Suryavanshi	2020	58		✓				✓	✓	✓	✓	✓				✓
Tan	2020	59		✓				✓	✓							
Temsah	2020	60		✓				✓	✓			✓				
Thomater	2020	61		✓				✓	✓		✓					
Tsan	2020	62		✓												
Uvais	2020	63				✓					✓					✓
Xiao	2020	64		✓				✓	✓							
Zhang	2020a	65														
Zhang	2020b	66		✓				✓	✓			✓				✓

with COVID-19 under their care, and they were not appropriately compensated for the workload.

Human resource perspective primarily focuses on individual-related factors.^{20-27 29-31 34-45 47-50 52-65} Safety concerns and fears of getting infected with COVID-19 and putting family members at risk (66%) appeared to be the primary causes of stress and burnout. Female gender (34%) and age and family status (19%) also emerged as determinants of risk of stress and burnout. Specifically, being young with no family or being a mother with young children influenced emotional stress and burnout in women. Similarly, less work experience and self-perception about lack of competency to care for patients with COVID-19 was associated with increased prevalence of stress and burnout (26%).

In terms of the symbolic frame, concerns about organisational culture (26%), patient care protocols (17%) and societal experiences of health professionals (26%) emerged as common triggers of stress.^{22 26 27 30 34-36 39-42 47 50 54 63 64 66} More specifically, issues related to ambiguous patient care protocols and perceived lack of infection control guidelines influenced stress and burnout. Similarly, the organisational culture, including lack of support and recognition by peers, supervisors and hospital leadership, were triggers of stress and burnout in women health professionals. From a macrocultural perspective, the societal and media portrayal of HCWs as 'heroes' increased moral responsibility and caused increased stress to meet these expectations, yet health professionals faced increased social isolation and stigma as they were considered as contagious by the general population.

From the political perspective, public health measures influenced stress and burnout.^{21-23 26 27 33 35 43 47 64} The government-level social distancing protocols increased social isolation (15%). Furthermore, lack of pandemic preparedness (2%), poor public health guidance on screening and treatment (4%) and measures related to infrastructure such as delayed testing and lack of treatment for COVID-19 patients (4%) exacerbated to stress and burnout in women HCWs.

Interventions that can support the well-being of women HCWs during a pandemic

Only 38.3% studies have examined potential interventions to support women in healthcare with COVID-19 related stress and burnout. We grouped the interventions on a spectrum ranging from self-focused intervention to systems-focused interventions (see [table 3](#)). A percentage of 29.7 included studies primarily focused on addressing well-being and resiliency at the individual level. The current literature discussed self-initiated interventions such as regular exercise, wellness activities such as yoga and meditation, faith-based activities, self-help resources, hobbies, psychological services such as therapists, hotlines and talk therapy as treatment strategies and other adaptive coping mechanisms as useful preventative strategies for women. From a structural perspective, 21.5% of included

studies recommended systems-level interventions such as work modifications, ensuring clear communication about policies, providing access to PPE, offering training related to managing COVID-19, instituting measures to support health professionals financially, providing rest areas for sleep and recovery, offering basic physical needs such as food and including training programmes to improve resiliency were considered potential strategies to support women in healthcare during the pandemic.

However, these studies did not provide evidence on the effectiveness and utility of these interventions in helping women in healthcare. There was, however, emerging evidence on the use of maladaptive coping mechanisms such as avoidant coping and substance use.^{25 39 44}

DISCUSSION

In this rapid review, we examined the triggering factors of occupational stress and burnout in women in healthcare in the context of the COVID-19 pandemic and potential interventions to mitigate these factors. We provided an overview of the evidence and identification of potential variables that influence the mental health well-being of women in healthcare. The current research literature primarily focuses on prevalence of stress, burnout, depression and anxiety using a cross-sectional approach to show the presence of these elements at a particular point in time. Furthermore, it looks at burnout as an individual issue that can be mitigated by self-help solutions such as coping, yoga, mindfulness and practising resilience. However, very weak evidence exists on the effectiveness of these interventions on women in healthcare (see [figure 2](#)).

In healthcare, there is limited understanding about burnout as an occupational phenomenon.⁶⁷ First, there is a gap in the literature regarding how organisations can shape the structures, cultures and processes to address the elements that trigger stress and burnout. Similarly, there is a limited understanding of how race, culture, leadership and profession impact occupational stress and burnout during COVID-19. For example, one in three nurses who have died of COVID-19 in the USA are from the Filipino community.⁶⁸ Similarly, there is a lack of understanding of burnout by occupation type. Physician burnout has received a lot of attention over the past decade, but very limited evidence exists regarding the burnout experienced by other health professionals, including support staff such as personal support workers who are at the frontlines of caring for patients in long-term care and nursing homes.

Similarly, there is very little evidence on how political factors such as policies and public health measures influence individual level burnout. For example, the US Families First Coronavirus Response Act, which required employers to provide up to 80 hours of paid sick leave for reasons related to COVID-19, allowed a provision to exclude HCWs from these benefits. A scan of social media discussions of this showed a significant stress and anxiety

Table 3 Interventions to support stress and burnout

Intervention spectrum	Intervention type	Example	Evidence source	Quality of evidence strength
Self-focused	Self-coping	Normalisation techniques	26	Very Weak Evidence
			50	
	Recovery and resiliency	Yoga and meditation Relaxation techniques Proper nutrition Time off Rest	32	Very Weak Evidence
			46	
			49	
			56	
			56	
	Physical activities	Sports Exercise	26	Very Weak Evidence
			49	
	Hobbies	Sports, cooking, movies and music Reading	26	Very Weak Evidence
			32	
			56	
	Faith-based activities	Religion	47	Very Weak Evidence
			49	
	Social networks	Family Friends Work colleagues Virtual networks	20	Very Weak Evidence
			32	
			37	
			46	
			47	
	Psychological support	Psychologists Psychiatrist Group counselling Talk therapy	20	Very Weak Evidence
24				
26				
27				
42				
46				
49				
55				
56				
Systems focused	Training	PPE use SARS-CoV-2 virus Patient care protocols Resiliency	20	Very Weak Evidence
			24	
			44	
			53	
			56	
	Communication	Transparent communication between management and frontline	24	Very Weak Evidence
			42	
			47	
			64	
	Workplace resources	Access to proper PPE Work coverage Isolation units Places for rest and sleep Childcare	20	Very Weak Evidence
			42	
			47	
			53	
			56	
			64	
	Workplace incentives	Flexible work policies Compensation	20	Very Weak Evidence
			24	
			25	
			26	
			42	
56				
Process improvement	Rapid testing for patients Improved infection control protocols	42	Very Weak Evidence	
		53		

PPE, personal protective equipment.

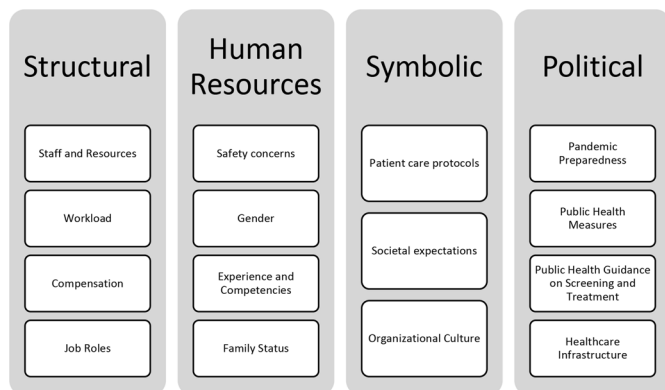


Figure 2 Triggers of stress and burnout.

among HCWs. Future studies should move beyond cross-sectional studies and explore the contexts, factors, organisational and systems variables and mechanisms that influence stress and burnout variables to better understand the determinants of stress and burnout in women.

Furthermore, there is very limited evidence on the impact of stress and burnout on quality of care, patient safety, employee engagement and staff attrition and absenteeism during COVID-19. Future studies on stress and burnout among HCWs should look at the short-term, medium-term and long-term impact to healthcare systems. Specifically, research is needed to understand how COVID-19 will affect women health professional's decisions about work.

There are several strengths to the current rapid review. To our knowledge, this is the first review that attempted to look at stress and burnout experienced by women in healthcare as an occupation phenomenon and that explored common triggers of stress and burnout during the COVID-19 pandemic. Our rapid review was guided by the Boleman and Deal's four-frame theoretical organisational theoretical framework to understand the contextual factors through the lens of structural, human resources, politics and symbolism. Our methodology was guided by the WHO guidelines on rapid reviews and reported using the PRISMA guidelines. The studies included in the review represent a global perspective of the issues. We highlighted the important gap in current understanding related to occupational stress and burnout in women in healthcare.

The current literature on stress and burnout related to COVID-19 includes both male and female health professionals. Although the studies included in this review provided gender breakdowns in the sample framework and discussed gender-related factors, it lacked gender-based subgroup analysis of what interventions are specifically effective for women in healthcare.

Our study has some limitations due to the methodological limitations of the included studies' characteristics: (1) we found variability in the measurement instruments; (2) studies primarily reported cross-sectional information of stress and burnout at a specific point of the pandemic; (3) studies lacked reporting on the structural, political and

cultural context of stress and burnout; and (4) interventions to address stress and burnout were under-reported.

There is a significant data gap on the impact of COVID-19 on women in healthcare. We recommend that national health professional organisations develop comprehensive data gathering and monitoring strategies to improve the science of health professional burnout research.

CONCLUSION

Organisational leaders and research scholars should consider occupational stress and burnout as an organisational phenomenon and provide organisational-level support for HCWs. To improve occupational wellness for women in healthcare, organisations should attempt to engage their healthcare workforce to listen to their concerns, consider the specific context of the workforce and design targeted interventions based on their identified needs.

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Contributors All authors conceptualised and designed the review. AS and SR reviewed titles, abstracts and full-text papers for eligibility. AS and SR extracted data, and all data extraction was verified by AS prepared the initial draft manuscript. SR, ACT and DL reviewed and edited the manuscript.

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Competing interests None declared.

Patient and public involvement Patients and/or the public were not involved in the design, or conduct, or reporting, or dissemination plans of this research.

Patient consent for publication Not required.

Provenance and peer review Not commissioned; externally peer reviewed.

Data availability statement Data are available in a public, open access repository. Availability of data and materials: this review is registered with the Open Science Framework (https://osf.io/y8fdh/?view_only=1d943ec3ddbd4f5c8f6a9290eca2e7).

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