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

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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 healthcare workers have been infected, and nearly 1000 deaths have occurred.5,6

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 Guide 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 (CRD420189750).

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. 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. 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. 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. 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.

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.

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
| Authors (last name of first author) | Year | Country       | Evidence source   | Research design          | Health professionals | Sample size | Female participants (%) |
|-----------------------------------|------|---------------|-------------------|--------------------------|----------------------|-------------|-------------------------|
| Algunmeeyn                        | 2020 | Jordan        | Qualitative       | ✓ ✓ ✓                    | physicians nurses    | 30          | 23                      |
| Asulais                           | 2020 | Saudi Arabia  | Cross-sectional   | ✓ ✓ ✓                    |                      | 529         | 40                      |
| Cai                               | 2020 | China         | Cross-sectional   | ✓ ✓ ✓                    |                      | 534         | 69                      |
| De Stefani                        | 2020 | Italy         | Cross-sectional   | ✓ ✓ ✓                    |                      | 1500        | 56                      |
| Elbay                             | 2020 | Turkey        | Cross-sectional   | ✓ ✓ ✓                    |                      | 442         | 57                      |
| Fargen                            | 2020 | USA           | Cross-sectional   | ✓                       |                      | 151         | 14                      |
| Gao                               | 2020 | China         | Qualitative       | ✓ ✓ ✓                    |                      | 14          | 93                      |
| Hoffman                           | 2020 | USA           | Cross-sectional   | ✓ ✓ ✓                    |                      | 365         | 69                      |
| Kackin                            | 2020 | Turkey        | Qualitative       | ✓ ✓ ✓                    |                      | 10          | 80                      |
| Kang                              | 2020 | China         | Cross-sectional   | ✓ ✓ ✓                    |                      | 994         | 86                      |
| Karimi                            | 2020 | Iran          | Qualitative       | ✓ ✓ ✓                    |                      | 12          | 67                      |
| Khalafallah                       | 2020 | USA           | Cross-sectional   | ✓ ✓ ✓                    |                      | 407         | 11                      |
| Lai                               | 2020 | China         | Cross-sectional   | ✓ ✓ ✓                    |                      | 1257        | 77                      |
| Li                                | 2020 | China         | Cross-sectional   | ✓ ✓ ✓                    |                      | 4369        | 100                     |
| Liu                               | 2020 | China         | Qualitative       | ✓ ✓ ✓                    |                      | 13          | 62                      |
| Martinez-Lopez                    | 2020 | Spain         | Cross-sectional   | ✓ ✓ ✓                    |                      | 157         | 79                      |
| Moorthy                           | 2020 | UK            | Cross-sectional   | ✓ ✓ ✓                    |                      | 200         | 50                      |
| Mosheva                           | 2020 | Israel        | Cross-sectional   | ✓ ✓ ✓                    |                      | 1106        | 49                      |
| Ng                                | 2020 | Malaysia      | Cross-sectional   | ✓ ✓ ✓                    |                      | 22          | 77                      |
| Nyashanu                          | 2020 | UK            | Qualitative       | ✓ ✓ ✓                    |                      | 40          | 53                      |
| Authors (last name of first author) | Year | Evidence source | Country | Research design | Health professionals | Sample size | Female participants (%) |
|-----------------------------------|------|------------------|---------|-----------------|----------------------|-------------|-------------------------|
| 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                      |
| Silczuk                           | 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                      |
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 (i.e., organisational resources, work-related policies and roles). 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 |
|-----------------|------|-----------------|
| Algunmeen       | 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              |
| Shalhub         | 2020 | 49              |
| Sharma          | 2020 | 50              |
| Shechter        | 2020 | 51              |
| Si              | 2020 | 52              |

| Structural | Human resources | 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 |
| ✓          | ✓               | ✓        | ✓         | ✓          | ✓      | ✓          | ✓                      | ✓                      | ✓                       | ✓                       | ✓                     | ✓                     | ✓                      |
| ✓          | ✓               | ✓        | ✓         | ✓          | ✓      | ✓          | ✓                      | ✓                      | ✓                       | ✓                       | ✓                     | ✓                     | ✓                      |
| ✓          | ✓               | ✓        | ✓         | ✓          | ✓      | ✓          | ✓                      | ✓                      | ✓                       | ✓                       | ✓                     | ✓                     | ✓                      |
| ✓          | ✓               | ✓        | ✓         | ✓          | ✓      | ✓          | ✓                      | ✓                      | ✓                       | ✓                       | ✓                     | ✓                     | ✓                      |
| ✓          | ✓               | ✓        | ✓         | ✓          | ✓      | ✓          | ✓                      | ✓                      | ✓                       | ✓                       | ✓                     | ✓                     | ✓                      |
| ✓          | ✓               | ✓        | ✓         | ✓          | ✓      | ✓          | ✓                      | ✓                      | ✓                       | ✓                       | ✓                     | ✓                     | ✓                      |
| ✓          | ✓               | ✓        | ✓         | ✓          | ✓      | ✓          | ✓                      | ✓                      | ✓                       | ✓                       | ✓                     | ✓                     | ✓                      |
| ✓          | ✓               | ✓        | ✓         | ✓          | ✓      | ✓          | ✓                      | ✓                      | ✓                       | ✓                       | ✓                     | ✓                     | ✓                      |
| ✓          | ✓               | ✓        | ✓         | ✓          | ✓      | ✓          | ✓                      | ✓                      | ✓                       | ✓                       | ✓                     | ✓                     | ✓                      |
| ✓          | ✓               | ✓        | ✓         | ✓          | ✓      | ✓          | ✓                      | ✓                      | ✓                       | ✓                       | ✓                     | ✓                     | ✓                      |
| ✓          | ✓               | ✓        | ✓         | ✓          | ✓      | ✓          | ✓                      | ✓                      | ✓                       | ✓                       | ✓                     | ✓                     | ✓                      |
| ✓          | ✓               | ✓        | ✓         | ✓          | ✓      | ✓          | ✓                      | ✓                      | ✓                       | ✓                       | ✓                     | ✓                     | ✓                      |
| ✓          | ✓               | ✓        | ✓         | ✓          | ✓      | ✓          | ✓                      | ✓                      | ✓                       | ✓                       | ✓                     | ✓                     | ✓                      |
| ✓          | ✓               | ✓        | ✓         | ✓          | ✓      | ✓          | ✓                      | ✓                      | ✓                       | ✓                       | ✓                     | ✓                     | ✓                      |
| ✓          | ✓               | ✓        | ✓         | ✓          | ✓      | ✓          | ✓                      | ✓                      | ✓                       | ✓                       | ✓                     | ✓                     | ✓                      |
| ✓          | ✓               | ✓        | ✓         | ✓          | ✓      | ✓          | ✓                      | ✓                      | ✓                       | ✓                       | ✓                     | ✓                     | ✓                      |
| ✓          | ✓               | ✓        | ✓         | ✓          | ✓      | ✓          | ✓                      | ✓                      | ✓                       | ✓                       | ✓                     | ✓                     | ✓                      |
| ✓          | ✓               | ✓        | ✓         | ✓          | ✓      | ✓          | ✓                      | ✓                      | ✓                       | ✓                       | ✓                     | ✓                     | ✓                      |
| ✓          | ✓               | ✓        | ✓         | ✓          | ✓      | ✓          | ✓                      | ✓                      | ✓                       | ✓                       | ✓                     | ✓                     | ✓                      |
| ✓          | ✓               | ✓        | ✓         | ✓          | ✓      | ✓          | ✓                      | ✓                      | ✓                       | ✓                       | ✓                     | ✓                     | ✓                      |
| ✓          | ✓               | ✓        | ✓         | ✓          | ✓      | ✓          | ✓                      | ✓                      | ✓                       | ✓                       | ✓                     | ✓                     | ✓                      |
| ✓          | ✓               | ✓        | ✓         | ✓          | ✓      | ✓          | ✓                      | ✓                      | ✓                       | ✓                       | ✓                     | ✓                     | ✓                      |
| ✓          | ✓               | ✓        | ✓         | ✓          | ✓      | ✓          | ✓                      | ✓                      | ✓                       | ✓                       | ✓                     | ✓                     | ✓                      |
| ✓          | ✓               | ✓        | ✓         | ✓          | ✓      | ✓          | ✓                      | ✓                      | ✓                       | ✓                       | ✓                     | ✓                     | ✓                      |
| ✓          | ✓               | ✓        | ✓         | ✓          | ✓      | ✓          | ✓                      | ✓                      | ✓                       | ✓                       | ✓                     | ✓                     | ✓                      |
| ✓          | ✓               | ✓        | ✓         | ✓          | ✓      | ✓          | ✓                      | ✓                      | ✓                       | ✓                       | ✓                     | ✓                     | ✓                      |
| ✓          | ✓               | ✓        | ✓         | ✓          | ✓      | ✓          | ✓                      | ✓                      | ✓                       | ✓                       | ✓                     | ✓                     | ✓                      |
| ✓          | ✓               | ✓        | ✓         | ✓          | ✓      | ✓          | ✓                      | ✓                      | ✓                       | ✓                       | ✓                     | ✓                     | ✓                      |
| ✓          | ✓               | ✓        | ✓         | ✓          | ✓      | ✓          | ✓                      | ✓                      | ✓                       | ✓                       | ✓                     | ✓                     | ✓                      |
| ✓          | ✓               | ✓        | ✓         | ✓          | ✓      | ✓          | ✓                      | ✓                      | ✓                       | ✓                       | ✓                     | ✓                     | ✓                      |
| ✓          | ✓               | ✓        | ✓         | ✓          | ✓      | ✓          | ✓                      | ✓                      | ✓                       | ✓                       | ✓                     | ✓                     | ✓                      |
| ✓          | ✓               | ✓        | ✓         | ✓          | ✓      | ✓          | ✓                      | ✓                      | ✓                       | ✓                       | ✓                     | ✓                     | ✓                      |
| ✓          | ✓               | ✓        | ✓         | ✓          | ✓      | ✓          | ✓                      | ✓                      | ✓                       | ✓                       | ✓                     | ✓                     | ✓                      |
### Table 2  Continued

| 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 | Social isolation |
| Sil      | 2020 | 53               | ✓         |                 |          |           |
| Siczuk   | 2020 | 54               |           |                 |          |           |
| Smith    | 2020 | 55               | ✓         |                 |          |           |
| Spiller  | 2020 | 56               | ✓         |                 |          |           |
| Stojanov | 2020 | 57               | ✓         | ✓               | ✓        | ✓         |
| Suryavanshi | 2020 | 58            | ✓         | ✓               | ✓        | ✓         | ✓        | ✓        | ✓        |
| Tan      | 2020 | 59               | ✓         | ✓               | ✓        | ✓         | ✓        |
| Temsah   | 2020 | 60               | ✓         | ✓               | ✓        | ✓         |
| Thommaier| 2020 | 61               | ✓         |                 | ✓        | ✓        |
| Tian     | 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 34-43 46-50 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 |
|                       | Recovery and resiliency | Yoga and meditation | 32  | Very Weak Evidence |
|                       |                   | Relaxation techniques | 46  | Evidence |
|                       |                   | Proper nutrition | 49  | Evidence |
|                       |                   | Time off | 56  | Evidence |
|                       |                   | Rest |     |                |
| **Physical activities** | Sports | Yoga and meditation | 26  | Very Weak Evidence |
|                       | Exercise | 46  | Evidence |
| **Hobbies**            | Sports, cooking, movies and music | Yoga and meditation | 26  | Very Weak Evidence |
|                       | Reading | 56  | Evidence |
| **Faith-based activities** | Religion | Yoga and meditation | 47  | Very Weak Evidence |
|                       |  |  |  |  |
| **Social networks**    | Family | Yoga and meditation | 20  | Very Weak Evidence |
|                       | Friends | 49  | Evidence |
|                       | Work colleagues | 49  | Evidence |
|                       | Virtual networks | 49  | Evidence |
| **Psychological support** | Psychologists | Yoga and meditation | 20  | Very Weak Evidence |
|                       | Psychiatrist | 49  | Evidence |
|                       | Group counselling | 49  | Evidence |
|                       | Talk therapy | 49  | Evidence |
| **Systems focused**   | Training | Yoga and meditation | 20  | Very Weak Evidence |
|                       | PPE use | 24  | Evidence |
|                       | SARS-CoV-2 virus | 44  | Evidence |
|                       | Patient care protocols | 53  | Evidence |
|                       | Resiliency | 56  | Evidence |
| **Communication**     | Transparent communication between management and frontline | Yoga and meditation | 24  | Very Weak Evidence |
|                       |  | 42  | Evidence |
|                       |  | 47  | Evidence |
| **Workplace resources** | Access to proper PPE | Yoga and meditation | 20  | Very Weak Evidence |
|                       | Work coverage | 42  | Evidence |
|                       | Isolation units | 47  | Evidence |
|                       | Places for rest and sleep | Yoga and meditation | 53  | Very Weak Evidence |
|                       | Childcare | 56  | Evidence |
| **Workplace incentives** | Flexible work policies | Yoga and meditation | 20  | Very Weak Evidence |
|                       | Compensation | 24  | Evidence |
|                       |  | 25  | Evidence |
|                       |  | 26  | Evidence |
|                       |  | 42  | Evidence |
|                       |  | 56  | Evidence |
| **Process improvement** | Rapid testing for patients | Yoga and meditation | 42  | Very Weak Evidence |
|                       | Improved infection control protocols | 53  | Evidence |

PPE, personal protective equipment.
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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