**Supplementary file 2.** Table Summary of results of individual studies

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|  **Authors** **Year, Country, journal** | **Research question/study aim/ title** | **Design, population** | **Environmental factors findings** | **Authors illustrations of strategies** |
| Akgun et al., 2020United States, Heart Lung | The authors offer approaches to sustaining frontline ICU HCWs. | Experience report IntensiveCareUnit, Health care workers | Inconsistent messaging from government, health agencies on appropriate precautions of best practices.Frontline HCWs may not have the bandwidth to plan or seek out self-care activities.Scheduling respite time requires expanding the pool of potential frontline providers. | Mental health and employee health clinicians can offer encouragement and support. ICU HCWs’ reflection on how to improve future practice Debriefing following critical events Providing targeted training and resources to those redeployed to ICU settings  |
| Almaghrabi et al.,2020, Arabia, Saudi medical journal | To analyze healthcare workers experiences in dealing with the COVID-19 pandemic | Questionnaire-based online survey, health care workers | Most of this paper focus on personal protective equipment (PPE).Participants knew why they should stay past their shift end in the event of disaster.950 (93.1%) and 753 (74.3%) were willing to work overtime.” | Providing PPE, reducing psychological stress, financial support and safety to family members of healthcare workers will increase the willingness to report to work. |
| Alvarez et al., 2020Ecuador, Scielo preprint | To synthesize actions for the management of the psychological safety of the personnelin emergency conditions  | Quantitative systematic bibliographic review, Hospital or isolation HCWs  | The need for psychological interventions mentioned.Telephone directories available for contact details for mental health groups.Promote rest, one hour sleep, short breaks of 5 or 7 minutes, or a change of task may be sufficient. | Global health measures should be employed to address stressing psychosocial factors.Health care systems should plan urgent actions for mental health. |
| Badahdah et al., 2020, Arabia, Int J Soc Psychiatry | To detect the prevalence of mental health issues inseveral health facilities in Oman. | Observational studycross-sectional web-based survey, Physicians and nurses | The study revealed a high prevalence of stress, anxiety and poor psychological well-being.Some mental health problems, as observed in previous disease outbreaks, might lead to maladaptive coping behaviors, including substance abuse and even suicide.  | There are many options for health care leaders to support and protect HCWs during this difficult time, such as implementing mindfulness and cognitive behavioral therapy intervention programs.The results of this study highlight the urgency of providing administrative and psychological support as well as current and accurate information on COVID-19 to health care workers. |
| Bahar, A. 2020 Turkey | to attract attention to the mental problems of healthcare employees in close contact with patients during the pandemic and the importance of psychological resilience throughoutthe period. | review healthcare workers | Increased workload, physical exhaustion, inadequate personal equipment, nosocomial transmission, and the need to make ethically difficult decisions on care may have negative effects on healthcare workers’ physical and mental well-being. | Mental support program for health professionals |
| Baker-Armstrong, J. 2020New Zealand, New Zealand Nurses Organisation | To explore resilience strategies on  nursing education and development;coaching and mentoring; experiential learning; and emotional attributes | Quantitativeliterature review Nurses | The promoting adult resilience program supported coaches in developing and sustaining personal resilience. Participants reported experiencing increased levels of coping, self-efficacy and personal resilience due to their increased use of positive self-talk.Coaches were supported through three key areas: facilitation of learning, personal growth and reflection on personal goals. | It was suggested equipping nurses and nursing students with the skills to develop positive and nurturing professional relationships.“If you would like support during these challenging times, accessing services such as the employee assistance programme”“Teaching nursing students strategies of reflective learning and reflexive practice enables them to sustain their equilibrium during periods of adversity” |
| Barbosa, D. J. 2020, Brazil, Comunicação, Ciência e Saúde | To identify the main psychological effects of the Covid-19 pandemic  | Literature review Nursing professionals | Professional burdens (elevated number of working hours and patients and pressure generated by training), were the factors identified as causing the increased stress in nursing professionals due to lack of support and training. | Increased contact between health professionals with psychologists and social workers in order to collaborate in reducing tension, anxiety and depression.Coping Strategy: Reduction of workload and / or increased rest periods. |
| Barreto et al., 2020Brazil, Scielo preprint | To discuss institutional labor violence in the face of theCOVID-19 pandemic | Reflectionarticle Nursing professionals | Insufficient personal protective equipment, gloves, alcohol gel and liquid soap.Low quality food.Facilities organized with the provision of mattresses on the floor in improvised places, making it impossible to provide adequate rest. | Psychosocial support; monitoring for diagnosis of illness, stress and burnout. |
| Bostan et al.,2020Turkey, Electronic Journal of General Medicine | To identify health care workers’ risk of COVID-19 and employees’ views and concerns on workingconditions  | Internet survey - quanti-qualitative, Health care workers | The possibility of not finding enough teams and equipment led to a rapid change in general approaches.Negative relationship between working conditions and anxiety levels.  |  |
| Buselli et al.,2020, Italy, Sustainability  | To highlight the experience of an Occupational Health Department responsible for monitoring conditions during the SARS-CoV-2 pandemic  | Interventioninternet survey. hospital staff | They not only learned how to tackle their emotional distress but also shared tips with colleagues in order to help them with similar issues.Difficulties in work relationships, characterized by a lack of communicative skills and of stress management strategies.Dedicated support was planned for newly hired employees (doctors and nurses) recruited to integrate the workforce during the outbreak. | “Multidisciplinary approaches, already used in the 2002-2004 SARS outbreak, were revealed to be helpful to support health workers during that epidemic disease”“Administration of mindfulness and self-relaxation techniques, within ACT and positive psychology protocols”To include the provision of a rest area and care for basic physical needs such as food. |
| Bussinguer, E. 2020Brazil, article in a webpage | Nurses leave the place of invisibility and lack of recognition to the place of main actors in a pandemic thatreaches everyone | Reflection Nurses | Undersized teams, with tasks superior to the rational possibilities of work.Irregular working conditions, in which the minimum safety requirements are not met concerning personal protective equipment in adequate quantity and quality. Health care workers becoming ill with numerous work-related diseases. |  |
| Canady, V. A. 2020China, Mental Health Weekly | Report on the research “Factors AssociatedWith Mental Health Outcomes Among Health Care Workers Exposed to Coronavirus Disease  | Report, Health care workers | The ever-increasing number of confirmed and suspected cases, overwhelming workload, depletion of personal protection equipment, [...] may all contribute to the mental burden of these health care workers | Special interventions to promote mental wellbeing in health care workers exposed to COVID-19 need to be immediately implemented, with women, nurses and front-line workers requiring particular attention. |
| Carmassi, C. 2020Italy, Psychiatry Res | To investigate risk and resilience factors for PTSD and PTSS in HCWs. | Systematic review Healthcare workers | A protective role of support from supervisors/colleagues and clear communication of directives and precautionary measures to be adopted were related to a better outcome with regard to PTSSSocial isolation and separation from family was found to be associated with higher rates of PTSS in SARS outbreak. | “Positive coping strategies, such as motivation to learning different skills, have been indicated as resilience factors” |
| Catania G. et al., 2021 | Italia, UK, Ireland | descriptive qualitative study | everyone on the ward ended up having to gain new knowledge about the pandemic and understand the new organisational arrangements.nursing leaders' roles changed and channels and styles of communication became altered.shift patterns and working hours changed regularly and dramatically, while many found themselves transferred to departments with COVID-19 patients in unstable conditions and with a new multidisciplinary team to collaborate with.the COVID-19 pandemic caused disruption to teams but alsotriggered many health professionals' resilience and in many casesstrengthened the bonds between peers. | Clarity of roles was important, however, these roles were varied across hospitals. COVID-19 nurse coordinators´ role was certainly crucial and experienced positively by most of the nurses, who considered it instrumental.All organizational changes involving nurses and other health care workers were preceded by communication from coordinators and management team.The pandemic has changed clinical practice, especially in response to the fear of contagion.many nurses reacted positively to this new reality:they strengthened their knowledge base and devised new solutions.lack of PPE, the inadequacy of PPE and a lack of guidance in relation to its correct use.training courses were speedily developed and delivered directly in thedepartments to ensure correct and safe PPE donning and undressing procedures.The COVID-19 pandemic also affected nurses' private and family lives because they were afraid of being infected and of infecting in turn their families. |
| Dimino et al., 2020 United States | To describe strategies that nurse leaders can utilize to foster PsyCap in their nurses. | Reflection | Nurse leaders have a responsibility to find ways to preserve the well-being of their frontline staff.Nurse leaders should be perceived by frontline nurses as authentic, connected, and similar to themselves. | It is important to set clear organizational and personal goals that are both specific and challenging. To conduct daily hope huddles during shift changes. By identifying specific competencies, skills, and experiences which contribute to past successes, nurse leaders can engineer mastery experiences.Nurses can be encouraged to reframe their daily experiences on positive things. This often results in personalized, humanized and more generous posturing towards each other.Offer leadership training to supervisors to ensure that they have the skills needed to support and maintain a healthy and healing work culture.Arrange for psychologists and social workers to meet with frontline nurses individually or in groups to debrief, vent, and provide support as needed.Cultivate a culture of caring in combination with an integrative therapies approach by offering wellness programs including Reiki, therapeutic touch, massage, aromatherapy, yoga, etc. Encourage mind/body approaches to become calm, centered, and fully present as part of your nurses’ daily routine. |
| Duncan, D., 2020Ireland, Nurs Manag  | To look at previous pandemics and consider how nurse leaders can support staff and show organisational resilience during such emergencies | Reflection Article Nurses | Managing workforce stress during a crisis is challenging for leaders as they try to support staff in terms of their mental well-being and resilience. Early data on various aspects of the COVID-19 pandemic reveal organizational issues such as concerns about the adequacy of pandemic planning, the effect of redeployment and training new staff to support staffing capacity, and staff concerns such as fear of transmission. | Nurse leaders can consider how to support their workforce by looking at other experiences of disasters.Providers in England, for example, have been advised to develop strategies to manage space, staff and supplies of personal protective equipment (PPE) to provide optimum care to patients. Organize staff rotas that include extra time for rest and recuperation. |
| Fan, J. 2020China, Aging | To collect the experiences and views at the forefront of the Covid-19 outbreak to investigate their potential problems | Qualitative and quantitative (mixed methods) Transdisciplinary nurses (TNs) | Changes in perceptions of nurses’ job responsibilities and obligations, - ambiguous roles. Enforcing new regulations which also requires an adaptation process.A lack of skill in the work content leading to higher infection rates among colleagues.A great test of physical quality and mental state. Acquiring new knowledge . | More detailed role classification, clearer role definitions and job descriptions, and appropriate suggestions for expanded responsibilities. Pre-job training to adapt to epidemic prevention and control-related nursing work.A psychological consultation platform for medical workers to reduce psychological pressure and maintain their mental health. |
| He, Z et al., 2020 China | To analyze the development of the ‘COVID-19 PsychologicalResilience Model’ and its efficacy during the COVID-19pandemic in China | descriptive healthcare workers | the integrated psychological intervention program created | reduce negative mental health outcomes in a sudden outbreak of a public health emergency |
| Horsch A & Lalor J. G., 2020Switzerland, Psychological Trauma: Theory, Research, Practice, and Policy | To discuss the impact of the COVID pandemic on staff caring for childbearing womenand their families | Article |  | Staff reporting high and persistent levels of psychological distress or mental health problems should be identified early and offered appropriate specialist support.Health services should begin offering psychosocial support for staff to protect their mental wellbeing if they are to continue to provide high quality care.Managers should ensure that time and space is given to help staff reflect on and make sense of the morally difficult decisions they must take. |
| Huang F. et al., 2021 China | to describe the resilience of nurses who cared for patientswith a confirmed COVID-19 diagnosis | qualitative research nurses | Being unfamiliar with the nursing protocols of infectious disease wards, worrying about potential exposure to COVID, and being overwhelmed and exhausted by the workload and shortage of personal protective equipment (PPE) all induced substantial stresses. Nurses received logistical and mental support from their institution (e.g., counseling and monetary assistance) and peer support from nurses who worked in the same unit. In addition, encouragement wasreceived from managers, who helped bedside nurses maintain a senseof safety and a positive perspective. | After 1 to 2 weeks of clinical practice, especially with the increased working hours in the COVID-related units, nurses became accustomed to the nursing care of COVID-19 patients. Nurses mentioned many sources of social support that helped them cope with the negative emotions that arose when they first began work including support from family members, colleagues, managers, and hospital administrators.Most nurses stated that the hospital conducted various forms of systematic training for medical staff nurses expressed confidence in the institutional infection control capability.During quarantine, I went for a walk inside the quarantine unit and did some exercises. |
| Jeff L et al 2020 Canada | Outlines how chief nurse executives (CNEs) in an urban regional hospital network are navigating the balancing act of organizational (internal) and system-level (regional and/or provincial) accountabilities amid the COVID-19 pandemic. | experience report | leadership efforts is finding the right balance in making critical decisions and building trust to ensure staff resiliency and safety amid managing their own resilience while enacting both internal and external accountabilities.increasing their fear and anxiety regarding shortages of PPE and critical supplies | Engage in transparent and timely communicationLearn from others and proactively planEnsure resiliency and safety |
| Liu et al., 2020China, The Lancet Global Health | To describe the experiences of health-care providers in the early stages of the outbreak | Qualitative study Physicians and nurses | Nurses had a leading role in facilitating communication and collaboration with a new multidisciplinary team. They needed to learn and master new technical procedures in a short timeProviders’ heavy workloads related to the insufficient number of health-care providers. In the first week, a lack of many supplies and equipment.An online psychological counselling group and a psychological assistance hotline. Some educational videos and materials were provided. | Hospitals need continuous training, monitoring, and supervision of infection prevention and control. Mutual trust and respectful environments should be developed, efficient communication maintained, the role of individuals and teams clarified, standardised procedures established, and a sense of belonging fostered.The promotion of interprofessional and interorganisational collaboration should be a priority to ensure efficient and high-quality care.Training, education, and improved communication are needed. |
| Nguyen, Y.L. 2020 França | To identify what happened, what went right, what went wrongand what to do in the case of a second wave of CoVID19 infection | survey caregivers | the collaboration and solidarity between colleaguesthe feeling of being usefulworking conditions difficulties (environment, logistics, material protection)the lack of visibility of their schedule or hospital ICU organizationworking within the same unit |  |
| Park et al., 2020United States, Disaster Medicine and Public Health Preparedness | To identify characteristics associated with willingness to report for duty during an influenza pandemic  | Quanti-qualitative study, Nurses | Younger employees and clinical support staff were more likely to come to work when given PPE.Providing interventions for family, such as Tamiflu and PPE was the greatest motivator for willingness to work during a pandemicInterventions intended to mitigate barriers that may impact a worker’s willingness to report to work - vacation (ie, time off) Lack of training as the top barrier. |  |
| Pollock A et al., 2020 Scotland, UK | To assess the effects of interventions aimed at supporting the resilience and mental health during and after a disease outbreak, epidemic or pandemic | Systematic Reviewfrontline health and social careprofessionals | Flexible interventions that were culturally appropriate, adaptable and/or able to be tailored to meet local needs were seen as key to successful implementation. | Interventions characterized as having a low level of complexity were seen as easier to implement.Intervention costs and associated costs of implementing the intervention were seen as both hindering and facilitating implementation. |
| Pitman, 2020Ireland, World of Irish Nursing & Midwifery | The article focus on the nature of PTSD, its presentation and impact, and the need to recognise and treat the condition | Reflection Nurses | A supportive work environment - nurse managers play a critical role in leading their team through this arduous period.Uncomfortable but vital, personal protective equipment and the barrier that it creates between the nurse and the patient.Organisational support, availability of organisational debriefing following a traumatic event. |   |
| Prestia A. S., 2020UnitedStates, Nurse Lead | Explores challenges and offers some suggestionson staying resilient and upholding one’s moral obligations | Reflection Nurse Leaders | As critical members of the executive team, nurse leaders represent and give voice to the frontline realitiesThe lack of personal protective equipment (PPE), the scarcity of hydrogen peroxide wipes, inadequate equipment, and inaccessible testing contribute to the fear of constant exposure to airborne illness.Leadership requires relationships cultivated over time and steeped in mutual respect and trust | Transparent communication that is truthful, mindful, and relevant is only one of the competencies necessary for nurse leadersEnabling the potential of nurses may include a mentor, as well as those leaders that they already have The nurse leader must manage the ambiguity and provide all key stakeholders truthful information and check their actions by combining the critical elements of self- awareness and reflection |
| Rodriguez B. O. and Sanchez T. L., 2020Spain | To describe the possible consequences at the psychological level that affect the way they are facing this pandemic crisis | Qualitative study, Health Care Workers | Professionals who are mostly new at work and might be overloaded at psychological level because of the situations they have had to deal with little experience.Lack of Resources Besides the lack of PPEs, tests. Time needed for resting not regarded - fatigue is related to possible accidents, the change of shifts could be a problem for family conciliation. | The prevention and treatment of Burnout Syndrome and its manifestations would be essential for the physical and mental health care in these particular professionals. as a result of WHO recommendations, have provided answers to the needs of mental health care. |
| Rosa et al., 2020United States, J Hosp Palliat Nurs | To provide specific recommendations for leveraging the role of nurses during this health crisis | Special article - reflection Palliative Nurse | Their exposure to trauma may result in positive changes, such as resilience and posttraumatic growth, which they cultivate within the patients and families for whom they provide care. | Strategic and consistent investment in palliative nurses during COVID-19 and expanding their role and scope of work will strengthen the broader health.Promoting nurse leadership in palliative care delivery is in alignment with current major global health agendas seeking to advance care. |
| Savitsky et al., 2020Israel | To assess levels of anxiety and ways of coping among nursing students | Quantitative cross-sectional study Nursing students | Lack of PPE among working students was found associated significantly with a higher anxiety score.Seeking information and consultation was significantly associated with occupational status. Work as students with payment in the healthcare facilities. |  |
| Thusini, S. 2020 London UK | reflectionson caring for patients with COVID-19 and relates her lived experience tothe concept of resilience | reflection ICU nurses | Learning and hope and, importantly, it captures key lessons that can equip healthcare staff with positive coping strategies in a time of unprecedented pressure.physical barriers we have put up between ourselves and the virus through use of PPEExisting coping strategiesWork-loadAbility to take regular breaks (rest, meal, drink, toilet) | Personal, interpersonal and community coping skills are vital and may determine the long-termresilience of us all. |
| Young, M., 2020UnitedStates, Hosp Case Manag. | Hospital nurses are facing unimagined stressors, all setting the stage for possible emotional crises and moral distress | Website article - reflection Nurses | Case managers in some hospitals have seen their jobs change to include working in critical care units (CCUs) and ICUs. Practice challenges are continuously changing, making it difficult for nurse leaders to answer questions and share information that is vital to their staff’s work. Their concerns about conserving personal protective equipment (PPE) and handling new responsibilities and duties could contribute to stress.This situation can cause leaders, nurses, and case managers to experience moral distress and helplessness. | Healthcare leaders can help nurses, case managers, and others reduce stress and prevent burnout by following various methods for building resilienceIn crisis situations, where there is minimal time to debrief and renewFor nurses and case managers on the front lines of the pandemic, it is important to take time to reflect, grieve, and rememberNurse leaders can help themselves and their staff through the pandemic by including a moment of gratitude in daily shift huddles, and by employing critical incident stress debriefings, when needed |