**Clinical Librarian Service Search Results**

**Request:** What literature or guidance is there on supporting staff in the aftermath and recovery following covid-19?

**Summary**

A search of bibliographic databases and the internet retrieved no literature on supporting healthcare workers (HCW) in the aftermath of covid-19, or infectious diseases such as SARS (Severe Acute Respiratory Syndrome); MERS (Middle Eastern Respiratory Syndrome); or other epidemics. Some literature was retrieved on the longer term impact on HCW of covid-19 and other infectious diseases. Most of the research comes from East Asia. Given cultural differences, the geographical location of research has been indicated in this summary in broad terms.

[Long term impact of SARS or MERS on healthcare workers](#_Long_term_impact): Four articles were retrieved on the impact of SARS or MERS more than one year after the event. Three focus on HCW who did not have SARS or MERS themselves (1b-1d). Among this group, data on long term outcomes was variable. Research from Canada and Hong Kong found that one year after a SARS outbreak, HCW caring for patients with SARS (PSARS) were at higher risk of posttraumatic stress than those who did not (1c, 1d). Canadian HCW who had cared for PSARS were more likely to experience burnout and to reduce their patient contact and work hours (1d). Hong Kong HCW who had cared for PSARS had higher levels of depression and anxiety (1c). Conversely, a Chinese study found HCW felt mental health concerns one year after the SARS epidemic were unrelated to SARS (1b).

Only one research article was found on HCW who developed SARS. This Chinese study found ongoing high levels of depression and pain, which had an impact on daily functioning (1a). News articles and case studies describe Canadian HCW with ongoing physical and mental health difficulties (6a) and continuing to experience social stigma and discrimination (6b) as a result of having contracted SARS. Others experienced stigma and discrimination after working with PSARS (6c).

[Medium term impact of SARS and MERS on healthcare workers](#_Medium_term_impact): Studies conducted between 1 and 6 months after SARS or MERS outbreaks found that:

* **MERS:** Korean HCW who had cared for patients with MERS were more likely to have posttraumatic stress than other HCW (2a, 2b). They were also more likely to consider leaving their job, although supervisor support reduced this (2a)
* **SARS:** Results on the impact of caring for PSARS are mixed. Several studies found greater risk among HCW who had cared for PSARS. Taiwanese HCW who had cared for PSARS had lower mental health and “vitality” scores than other HCW (2c). A different Taiwanese study found stress related to caring for PSARS may have had an impact on HCW considering leaving their jobs (2e). Chinese HCW in high risk areas during a SARS outbreak had greater posttraumatic stress than HCW in medium risk areas (2d). Two quantitative Singaporean studies analyse the impact of different factors on vulnerability to posttraumatic stress and psychological morbidity in HCW after SARS outbreaks (2h, 2i).

A qualitative study describes the impact of SARS on Hong Kong HCW, including the process of adjustment and recovery (2f).

[Interventions to support healthcare staff during covid-19](#_Interventions_to_support): Only 2 articles were retrieved by the search. One describes a Chinese hospital which experienced covid-19. After finding psychological interventions were not being taken up by HCW, although the HCW were showing signs of distress, the psychology team interviewed HCW and found their main concerns were rest, personal protective equipment (PPE), and training to deal with patients’ psychological concerns. The interventions available were adjusted to include places for HCW to rest away from their families, including reassurance food would be provided for HCW; support for video communication between HCW and their families; training in managing patients’ anxiety; additional support from security staff; detailed PPE guidance; leisure activities and relaxation training; and counsellors being available in the designated rest space (3a). A BMJ opinion article on the importance of HCW resting appropriately which refers in passing to some of the resources available may perhaps be of interest (3b).

[Interventions to support healthcare workers during ebola, swine flu, and SARS](#_Interventions_to_support_1): A number of articles discuss interventions to support HCW during infectious disease epidemics. These include:

* A group of interventions in a Singaporean hospital. This included regular communications from senior leaders, food and welfare gift packs, and social events to provide an appropriate environment to relax when HCW were socially distant from family and friends. The authors assess the impact of this package of interventions on coping styles (4c).
* The Anticipate, Plan and Deter (APD) Responder Risk and Resilience Model in the American army in Africa (4a)
* “resources that facilitate reflection on the effects of extraordinary stressors” (more detail not available without reading the full article) (4d)
* Group therapy (4e)

A news article also refers to the Nursing and Midwifery Council taking the impact of pandemic flu into account if nurses or midwives are reported to the regulator (4b).

[Causes of impact of covid-19 on healthcare staff](#_Causes_of_impact): Three articles from a Chinese setting discuss which staff are most vulnerable during covid-19. One article found that young women were most affected, but also presents a complex model of vulnerability to mental health disturbances (5a). Another found front-line nurses were less stressed than nurses not treating patients with covid-19 (5b). A third found that “Levels of social support for medical staff were significantly associated with self-efficacy and sleep quality and negatively associated with the degree of anxiety and stress” (5c).

**Unfortunately there appears to be no literature** on supporting HCW with the long term consequences of infectious disease outbreaks such as covid-19, SARS, or MERS. There is evidence of ongoing posttraumatic stress and mental health concerns as a result of this type of epidemic, as well as a possible increase in staff turnover. However, the research is quite limited.

Two articles were retrieved after these results were sent:

1. “Amazed, guilty, excited, incompetent and frustrated — how NHS leaders feel amid the crisis” by Niall Dickson, in Health Service Journal 7 April 2020.

2. “NHS staff to be offered mental health support for Covid-19 ‘shell shock’ ” by Amelia Hill, in the Guardian, 8th April 2020.

<https://www.theguardian.com/society/2020/apr/08/nhs-staff-mental-health-shell-shock-tackling-covid-19-coronavirus?CMP=share_btn_tw>

A search of the website of NHS Practitioner Health (referred to in this article) retrieved this link <https://www.practitionerhealth.nhs.uk/covid-19-workforce-wellbeing> but not the press release on which the article is based.

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**Current at:** 7th April 2020

**Time taken for search:** 8 hours.

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I hope that I have interpreted your request correctly. Please let me know if you would like me to search further.

**Accessing Articles**

Links are provided where online access to the full-text is available. An OpenAthens username and password may be required for online access to articles. You can register for one here: <https://openathens.nice.org.uk/>

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**Please acknowledge this work in any resulting paper or presentation as:**

Evidence Search: Staff wellbeing after covid-19 (LS2). Lindsay Snell (2019). Derby, UK: University Hospitals of Derby & Burton NHS Foundation Trust Library and Knowledge Service.

**Feedback**

Once you have read this report, I would appreciate it if you would complete our online literature search feedback form at:

<https://www.smartsurvey.co.uk/s/LiteratureSearchFeedback20192020/>

This relates to this specific search and will help us to monitor and improve our service. Many Thanks.

Kind regards,

Lindsay Snell

Clinical Librarian

Email: [Lindsay.snell@nhs.net](mailto:Lindsay.snell@nhs.net)

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**Results**

# Long term impact of SARS or MERS on healthcare workers

## 1a. Emotional, memory and daily function among health care worker survivors with SARS

**Author(s):** Shi, Chuan; Yu, Xin; Hong, Nan; Chan, Raymond C. K.; Chen, Yufang; He, Yi

**Source:** Chinese Mental Health Journal; Sep 2011; vol. 25 (no. 9); p. 660-665

*Note: It is unclear whether this article is in English or in Chinese.*

Objective: To investigate the emotional, memory and daily function as well as psychosomatic relations of health care workers in Severe Acute Respiratory Syndrome (SARS) survivors. Method: A total of 43 health care worker SARS survivors and 41 healthy control subjects in three hospitals in Beijing were assessed depression with the Self-Rating Depression Scale (SDS), pain with Visual Analogue Scale (VAS), daily function with Activities of Daily Living Scale (ADLS), and memory function with World Health Organization-University of California-Los Angeles Auditory Verbal Learning Test (WHO-UCLA AVLT) and Rey-Osterrieth Complex Figure Test (ROCF). The depression was classified according to the severity index (total score/80). Results: The cohort experienced lasting and striking depression (mild, moderate and severe depression were 31 % , 35% and 17%) and pain (VAS = 5. 2 ± 2. 2). Compared with the healthy control group, SARS survivors had more intrusion errors (P = 0. 047). Pain was positively correlated with emotion ( r = 0. 40, P = 0. 031) and daily functioning ( r = 0. 47, P = 0.01). The duration of methylprednisolone treatment was also positively correlated with daily functioning ( r = 0. 38, P = 0.041). Conclusion: Depression and pain are the major problems of SARS survivors which should be concerned about and handled to the physicians in general or infectious disease hospitals. Long-term utilization and overdosage of glucocorticoid are cautioned against in SARS treatment

(PsycINFO Database Record (c) 2016 APA, all rights reserved) (Source: journal abstract)

## 1b. Mental Symptoms in Different Health Professionals During the SARS Attack: A Follow-up Study.

**Author(s):** Lung, For-Wey; Lu, Yi-Ching; Chang, Yong-Yuan; Shu, Bih-Ching

**Source:** The Psychiatric quarterly; Jun 2009; vol. 80 (no. 2); p. 107-116

Available at [The Psychiatric quarterly](http://search.ebscohost.com/login.aspx?direct=true&scope=site&site=ehost-live&db=mdc&AN=19247834) - from EBSCO (MEDLINE Complete)

Available at [The Psychiatric quarterly](http://gateway.proquest.com/openurl?ctx_ver=Z39.88-2004&res_id=xri:pqm&req_dat=xri:pqil:pq_clntid=145298&rft_val_fmt=ori/fmt:kev:mtx:journal&genre=article&issn=0033-2720&volume=80&issue=2&spage=107) - from ProQuest (Health Research Premium) - NHS Version

Available at [The Psychiatric quarterly](http://openurl.ebscohost.com/linksvc/linking.aspx?authtype=athens&genre=article&issn=0033-2720&volume=80&issue=2&spage=107&date=2009) - from EBSCO (Psychology and Behavioral Sciences Collection)

AIM The aims of the study were to assess the psychological impact of SARS bio-disaster on healthcare workers. METHODS The participants were 127 healthcare workers who had taken care of suspected SARS patients. All participants completed the Chinese Health Questionnaire (CHQ), Eysenck Personality Questionnaire, and Parental Bonding Instrument at the first stage and the CHQ again a year later. RESULTS Healthcare workers that had mental symptoms at follow-up reported the symptoms were associated with daily-life stress and not the SARS crisis. The physicians had more somatic symptoms than nurses, suggesting different professions have different impact on mental health. Additionally, individual's early maternal attachment and neuroticism were found to have greater effect on mental health of life-threatening stress. CONCLUSIONS Life-threatening and daily-life stress show two different patterns of influence on mental health. These results provided a preclinical model for understanding, and preventing, human stress-related psychiatric disorders in the future.

**Database:** Medline

## 1c. Immediate and sustained psychological impact of an emerging infectious disease outbreak on health care workers

**Author(s):** McAlonan, Grainne M.; Lee, Antoinette M.; Cheung, Vinci; Cheung, Charlton; Tsang, Kenneth W. T.; Sham, Pak C.; Chua, Siew E.; Wong, Josephine G. W. S.

**Source:** The Canadian Journal of Psychiatry / La Revue canadienne de psychiatrie; Apr 2007; vol. 52 (no. 4); p. 241-247

Available at [Canadian journal of psychiatry. Revue canadienne de psychiatrie](http://europepmc.org/search?query=(DOI:10.1177/070674370705200406)) - from Europe PubMed Central - Open Access

Available at [Canadian journal of psychiatry. Revue canadienne de psychiatrie](http://gateway.proquest.com/openurl?ctx_ver=Z39.88-2004&res_id=xri:pqm&req_dat=xri:pqil:pq_clntid=145298&rft_val_fmt=ori/fmt:kev:mtx:journal&genre=article&issn=0706-7437&volume=52&issue=4&spage=241) - from ProQuest (Health Research Premium) - NHS Version

Available at [Canadian journal of psychiatry. Revue canadienne de psychiatrie](https://journals.sagepub.com/doi/pdf/10.1177/070674370705200406) - from Unpaywall

Objective: To assess the immediate and sustained psychological health of health care workers who were at high risk of exposure during the severe acute respiratory syndrome (SARS) outbreak. Methods: At the peak of the 2003 SARS outbreak, we assessed health care workers in 2 acute care Hong Kong general hospitals with the Perceived Stress Scale (PSS-10). One year later, we reassessed these health care workers with the PSS-10, the 21-Item Depression and Anxiety Scale (DASS-21), and the Impact of Events Scale-Revised (IES-R). We recruited high-risk health care workers who practised respiratory medicine and compared them with nonrespiratory medicine workers, who formed the low-risk health care worker control group. Results: In 2003, high-risk health care workers had elevated stress levels (PSS-10 score = 17.0) that were not significantly different from levels in low-risk health care worker control subjects (PSS-10 score = 15.9). More high-risk health care workers reported fatigue, poor sleep, worry about health, and fear of social contact, despite their confidence in infection-control measures. By 2004, however, stress levels in the high-risk group were not only higher (PSS-10 score = 18.6) but also significantly higher than scores among low-risk health care worker control subjects (PSS-10 score = 14.8, P < 0.05). In 2004, the perceived stress levels in the high-risk group were associated with higher depression, anxiety, and posttraumatic stress scores (P < 0.001). Posttraumatic stress scores were a partial mediator of the relation between the high risk of exposure to SARS and higher perceived stress. Conclusions: Health care workers who were at high risk of contracting SARS appear not only to have chronic stress but also higher levels of depression and anxiety. Front-line staff could benefit from stress management as part of preparation for future outbreaks. (PsycINFO Database Record (c) 2016 APA, all rights reserved) (Source: journal abstract)

## 1d. Long-term psychological and occupational effects of providing hospital healthcare during SARS outbreak.

**Author(s):** Maunder, Robert G; Lancee, William J; Balderson, Kenneth E; Bennett, Jocelyn P; Borgundvaag, Bjug; Evans, Susan; Fernandes, Christopher M B; Goldbloom, David S; Gupta, Mona; Hunter, Jonathan J; McGillis Hall, Linda; Nagle, Lynn M; Pain, Clare; Peczeniuk, Sonia S; Raymond, Glenna; Read, Nancy; Rourke, Sean B; Steinberg, Rosalie J; Stewart, Thomas E; VanDeVelde-Coke, Susan; Veldhorst, Georgina G; Wasylenki, Donald A

**Source:** Emerging infectious diseases; Dec 2006; vol. 12 (no. 12); p. 1924-1932

Available at [Emerging infectious diseases](http://search.ebscohost.com/login.aspx?direct=true&scope=site&site=ehost-live&db=mdc&AN=17326946) - from EBSCO (MEDLINE Complete)

Healthcare workers (HCWs) found the 2003 outbreak of severe acute respiratory syndrome (SARS) to be stressful, but the long-term impact is not known. From 13 to 26 months after the SARS outbreak, 769 HCWs at 9 Toronto hospitals that treated SARS patients and 4 Hamilton hospitals that did not treat SARS patients completed a survey of several adverse outcomes. Toronto HCWs reported significantly higher levels of burnout (p = 0.019), psychological distress (p<0.001), and posttraumatic stress (p<0.001). Toronto workers were more likely to have reduced patient contact and work hours and to report behavioral consequences of stress. Variance in adverse outcomes was explained by a protective effect of the perceived adequacy of training and support and by a provocative effect of maladaptive coping style and other individual factors. The results reinforce the value of effective staff support and training in preparation for future outbreaks.

**Database:** Medline

# Medium term impact of SARS and MERS on healthcare workers

## 2a. Assessing the Presence of Post-Traumatic Stress and Turnover Intention Among Nurses Post-Middle East Respiratory Syndrome Outbreak: The Importance of Supervisor Support.

**Author(s):** Jung, Heeja; Jung, Sun Young; Lee, Mi Hyang; Kim, Mi Sun

**Source:** Workplace health & safety; Mar 2020 ; p. 2165079919897693

Background: South Korea faced the Middle East Respiratory Syndrome (MERS) outbreak for the first time in 2015, which resulted in 186 infected patients and 39 deaths. This study investigated the level of post-traumatic stress disorder (PTSD) and turnover intention, the relationship between PTSD and turnover intention, and the buffering effect of supervisor support among nurses post-MERS outbreak. Methods: In total, 300 nurses from three of 15 isolation hospitals in South Korea were invited to participate. We collected data pertaining to PTSD, turnover intention, supervisor support, work-related factors, and socio-demographic factors through a structured survey distributed to the nurses at the hospitals after the outbreak. For the statistical analyses, descriptive statistics and multiple regression were employed. Findings: Of the 147 participants, 33.3% were involved in the direct care of the infected patients, whereas 66.7% were involved in the direct care of the suspected patients. More than half (57.1%) of the nurses experienced PTSD, with 25.1% experienced full PTSD and 32.0% with moderate or some level of PTSD. The mean score of turnover intention was 16.3, with the score range of 4 to 20. The multiple regression analysis revealed that PTSD was positively associated with turnover intention, and supervisor support had a strong buffering effect. Conclusion/Application to Practice: These findings confirmed that after a fatal infectious disease outbreak like MERS, nurses experience high level of PTSD and show high intention to leave. Organizational strategies to help nurses to cope with stress and to prevent turnover intention, especially using supervisor support, would be beneficial.

**Database:** Medline

## 2b. Psychological impact of the 2015 MERS outbreak on hospital workers and quarantined hemodialysis patients.

**Author(s):** Lee SM et al.

**Source:** Compr Psychiatry. 2018 Nov;87:123-127. doi: 10.1016/j.comppsych.2018.10.003. Epub 2018 Oct 13.

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7094631/>

OBJECTIVES: This study aimed to assess the immediate stress and psychological impact experienced by quarantined patients undergoing hemodialysis and university hospital workers who treated patients Middle East respiratory syndrome (MERS) during its outbreak. DESIGN: The group of subjects consisted of 1800 hospital practitioners and 73 quarantined patients undergoing hemodialysis. The Impact of Events Scale-Revised (IES-R) was administered to the practitioners twice, once during the hospital shutdown and again one month after the shutdown. The Mini International Neuropsychiatric Interview and Hospital Anxiety and Depression Scale were administered to patients undergoing hemodialysis. RESULTS: During the initial stages of the MERS outbreak, healthcare workers who performed MERS-related tasks scored significantly higher on the total IES-R and its subscales. In the second assessment of the high-risk group, the sleep and numbness subscale scores from the IES-R differed depending on the implementation of home quarantine, and the intrusion subscale scores differed depending on the performance of MERS-related tasks. CONCLUSION: Medical staff that performed MERS-related tasks showed the highest risk for post-traumatic stress disorder symptoms even after time had elapsed. The risk increased even after home quarantine. Prompt and continuous psychiatric intervention is needed in high mortality infectious disease outbreaks.

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## 2c. Impact of severe acute respiratory syndrome care on the general health status of healthcare workers in Taiwan.

**Author(s):** Chen NH et al.

**Source:** Infect Control Hosp Epidemiol. 2007 Jan;28(1):75-9. Epub 2006 Dec 15.

BACKGROUND: The impact of the outbreak of severe acute respiratory syndrome (SARS) was enormous, but few studies have focused on the infectious and general health status of healthcare workers (HCWs) who treated patients with SARS. DESIGN: We prospectively evaluated the general health status of HCWs during the SARS epidemic. The Medical Outcome Study Short-Form 36 Survey was given to all HCWs immediately after caring for patients with SARS and 4 weeks after self-quarantine and off-duty shifts. Tests for detection of SARS coronavirus antibody were performed for HCWs at these 2 time points and for control subjects during the SARS epidemic. SETTING: Tertiary care referral center in Taipei, Taiwan. SUBJECTS: Ninety SARS-care task force members (SARS HCWs) and 82 control subjects. RESULTS: All serum specimens tested negative for SARS antibody. Survey scores for SARS HCWs immediately after care were significantly lower than those for the control group (P<.05 by the t test) in 6 categories. Vitality, social functioning, and mental health immediately after care and vitality and mental health after self-quarantine and off-duty shifts were among the worst subscales. The social functioning, role emotional, and role physical subscales significantly improved after self-quarantine and off-duty shifts (P<.05, by paired t test). The length of contact time (mean number of contact-hours per day) with patients with SARS was associated with some subscales (role emotional, role physical, and mental health) to a mild extent. The total number of contact-hours with symptomatic patients with SARS was a borderline predictor (adjusted R2=0.069; P=.038) of mental health score. CONCLUSIONS: The impact of the SARS outbreak on SARS HCWs was significant in many dimensions of general health. The vitality and mental health status of SARS HCWs 1 month after self-quarantine and off-duty shifts remained inferior to those of the control group.

## 2d. The psychological effect of severe acute respiratory syndrome on emergency department staff.

**Author(s):** Lin CY et al.

**Source:** Emerg Med J. 2007 Jan;24(1):12-7.

BACKGROUND: The severe acute respiratory syndrome (SARS) outbreak in 2003 affected 29 countries. The SARS outbreak was unique in its rapid transmission and it resulted in heavy stress in first-line healthcare workers, particularly in the emergency department. AIM: To determine the influence of SARS on the psychological status, including post-traumatic stress disorder (PTSD) symptoms, of the staff in the emergency department. METHODS: To investigate whether different working conditions in the hospital led to different psychological effects on healthcare workers, the psychological effect on emergency department staff in the high-risk ward was compared with that on psychiatric ward staff in the medium-risk ward. Davidson Trauma Scale-Chinese version (DTS-C) and Chinese Health Questionnaire-12 (CHQ-12) items were designed to check the psychological status of the staff in the month after the end of the SARS outbreak. RESULTS: 86 of 92 (93.5%) medical staff considered the SARS outbreak to be a traumatic experience. The DTS-C scores of staff in the emergency department and in the psychiatric ward were significantly different (p = 0.04). No significant difference in CHQ score was observed between the two groups. Emergency department staff had more severe PTSD symptoms than staff in the psychiatric ward. CONCLUSION: SARS was a traumatic experience for healthcare providers in Taiwan. Most staff in the emergency department and in the psychiatric ward had PTSD. Emergency department staff had more severe PTSD symptoms than staff in the psychiatric ward.

PMID: 17183035 PMCID: PMC2658141 DOI: 10.1136/emj.2006.035089

[Indexed for MEDLINE] Free PMC Article

## 2e. Nurses' perceptions of severe acute respiratory syndrome: Relationship between commitment and intention to leave nursing

**Author(s):** Chang, Chao-Sung; Du, Pey-Lan; Huang, Ing-Chung

**Source:** Journal of Advanced Nursing; Apr 2006; vol. 54 (no. 2); p. 171-179

Available at [Journal of Advanced Nursing](https://go.openathens.net/redirector/nhs?url=https%3A%2F%2Fonlinelibrary.wiley.com%2Fdoi%2Ffull%2F10.1111%2Fj.1365-2648.2006.03796.x) - from Wiley Online Library Medicine and Nursing Collection 2019 - NHS

Aims: This paper reports a study which aimed to: (1) investigate the relationship between nurses' commitment to the nursing profession and organization and their intention to leave; (2) investigate nurses' perceptions of the possibility of acquiring severe acute respiratory syndrome infection and its moderation of their commitment to the nursing profession and the organization and their consequent intentions to leave the profession and the organization following the severe acute respiratory syndrome outbreak. Background: The outbreak of severe acute respiratory syndrome in 2003 resulted in a fatality rate of approximately 11%. Nurses in hospitals caring for patients with severe acute respiratory syndrome maintained close contact with the infected patients. The high risk of infection and death associated with caring for patients with severe acute respiratory syndrome had a great impact on nurse retention in hospitals. Nurse turnover in many countries where these outbreaks occurred has been high since the first outbreak occurred in March 2003. Methods: Three hundred and thirty nurses working at a Taiwan hospital during the time of the severe acute respiratory syndrome outbreak completed the Meyer, Allen & Smith Organizational and Occupational Commitment Scales, Intention to Leave and Perceived Stress of Infection Scales between July and August 2003. Results: All three components of occupational and organizational commitments were negatively associated with nurses' intentions to leave the nursing profession and the organization. Nurses' perceptions of the possibility of acquiring severe acute respiratory syndrome infection through caring for these patients had a moderating effect on the relationship between commitment and the intention to leave. Conclusions: Perceived risk to life from infection has a possible influence on the commitment/intention-to-leave model in hospital nurses caring for patients with severe acute respiratory syndrome, and this information can inform hospital and nursing managers about nurse retention following a severe acute respiratory syndrome outbreak and the management of commitment in the context of nursing human resources management.

(PsycINFO Database Record (c) 2016 APA, all rights reserved) (Source: journal abstract)

## 2f. An exploratory study of nurses suffering from severe acute respiratory syndrome (SARS).

**Author(s):** Mok, Esther; Chung, Betty P M; Chung, Joanne W Y; Wong, Thomas K S

**Source:** International journal of nursing practice; Aug 2005; vol. 11 (no. 4); p. 150-160

Available at [International journal of nursing practice](https://go.openathens.net/redirector/nhs?url=https%3A%2F%2Fonlinelibrary.wiley.com%2Fresolve%2Fopenurl%3Fgenre%3Darticle%26sid%3DTDnet%26issn%3D1322-7114%26date%3D2005%26volume%3D11%26issue%3D4%26spage%3D150) - from Wiley Online Library Medicine and Nursing Collection 2019 - NHS

In 2003, severe acute respiratory syndrome (SARS) came to be recognized as a newly emergent form of disease that is highly contagious. The aim of this study was to describe the perceptions of nurses with SARS in Hong Kong, as the perceptions of nurses who have suffered from SARS have not been studied. Ten nurses who had suffered from SARS were interviewed, either face-to-face or by telephone, about their subjective experiences. These interviews provided in-depth, descriptive data, which were analysed using content analysis. Nine broad categories were identified: uncertainty, information control, feelings of anger and guilt, lack of preparation and fear of death, feelings of isolation and loneliness, physical effects, support, change of perspective of life, and change of perspective of nursing. Although the dreaded disease affected the nurses tremendously, both physically and psychologically, it has also had its positive side. As a result of experiencing the illness, the participants came to treasure relationships, health and everyday life more. In caring for patients, they came to see the world more from the perspective of the patients. They found that they need to take the time to reassure patients and families and to seriously listen to all of their concerns.

**Database:** Medline

## 2g. Fear of severe acute respiratory syndrome (SARS) among health care workers.

**Author(s):** Ho, Samuel M Y; Kwong-Lo, Rosalie S Y; Mak, Christine W Y; Wong, Joe S

**Source:** Journal of consulting and clinical psychology; Apr 2005; vol. 73 (no. 2); p. 344-349

Available at [Journal of consulting and clinical psychology](http://gateway.proquest.com/openurl?ctx_ver=Z39.88-2004&res_id=xri:pqm&req_dat=xri:pqil:pq_clntid=145298&rft_val_fmt=ori/fmt:kev:mtx:journal&genre=article&issn=0022-006X&volume=73&issue=2&spage=344) - from ProQuest PsycARTICLES - NHS

In this study, the authors examined fear related to severe acute respiratory syndrome (SARS) among 2 samples of hospital staff in Hong Kong. Sample 1 included health care workers (n=82) and was assessed during the peak of the SARS epidemic. Sample 2 included hospital staff who recovered from SARS (n=97). The results show that participants in both samples had equal, if not more, concern about infecting others (especially family members) than being self-infected. Sample 1 participants had stronger fear related to infection than Sample 2 participants, who seemed to be concerned more about other health problems and discrimination. Participants with lower self-efficacy tended to have higher fear related to SARS. Fear related to SARS was also correlated positively with posttraumatic stress symptoms among respondents of Sample 2 (recovered staff). Interventions based on these findings are described.

**Database:** Medline

## 2h. Psychological impact of the SARS outbreak on a Singaporean rehabilitation department...including commentary by Leong I, Thompson DR

**Author(s):** Sin SS; Huak CY

**Source:** International Journal of Therapy & Rehabilitation; Sep 2004; vol. 11 (no. 9); p. 417-424

Available at [International Journal of Therapy and Rehabilitation](http://pdfs.semanticscholar.org/415c/b7a0ccdfeaf0a76e74b7d1843f66fcfe4c35.pdf) - from Unpaywall

Severe acute respiratory syndrome (SARS) developed in Singapore in March 2003. It started from three index cases and rapidly multiplied in the hospitals. The total number of probable SARS cases was 238 of which 42% was health-care workers. This article describes the psychological impact of the SARS outbreak on the staff of a rehabilitative services department in a general hospital in Singapore 2 months after the outbreak.In total, 55 rehabilitation staff were asked to participate in this voluntary survey, consisting of self-reported measures on demographics, the General Health Questionnaire (GHQ) and the Impact of Events Scale (IES). A questionnaire measuring changes in life priorities as a result of SARS and ways that people coped with SARS was also administered. A total of 23.4% of subjects had GHQ scores higher than 5, indicating presence of psychiatric symptoms, while 12.8% of them scored more than 30 for IES, indicating presence of post-traumatic stress symptoms. Support from colleagues, taking precautionary measures and getting dear directives and disease information had helped participants to cope with the psychological impact of the epidemic. Health-care facilities need to look into infection control, good information dissemination and emotional support structures for staff to help their employees cope with the psychological impact of epidemic outbreaks.

**Database:** CINAHL

## 2i. Psychological impact of the 2003 severe acute respiratory syndrome outbreak on health care workers in a medium size regional general hospital in Singapore.

**Author(s):** Chan, Angelina O M; Huak, Chan Yiong

**Source:** Occupational medicine (Oxford, England); May 2004; vol. 54 (no. 3); p. 190-196

Available at [Occupational medicine (Oxford, England)](https://academic.oup.com/occmed/article-lookup/doi/10.1093/occmed/kqh027) - from HighWire - Free Full Text

Available at [Occupational medicine (Oxford, England)](http://search.ebscohost.com/login.aspx?direct=true&scope=site&site=ehost-live&db=mdc&AN=15133143) - from EBSCO (MEDLINE Complete)

Available at [Occupational medicine (Oxford, England)](https://academic.oup.com/occmed/article-pdf/54/3/190/4195922/kqh027.pdf) - from Unpaywall

AIMS To describe the psychological impact of severe acute respiratory syndrome (SARS) on health care workers in a regional general hospital 2 months post-outbreak. METHOD Doctors and nurses were encouraged to participate. The survey consisted of self-report measures: demographics, the General Health Questionnaire (GHQ) 28 and Impact of Events Scale (IES). A questionnaire enquiring about changes in life's priorities due to SARS and circumstances that helped with coping was used. Participation was strictly voluntary and responses anonymous. RESULTS In total 177 out of 661 (27%) participants [40 out of 113 (35%) doctors and 137 out of 544 (25%) nurses] had a GHQ 28 score >or=5. Doctors [P = 0.026, odds ratio (OR) = 1.6 and 95% confidence interval (CI) = 1.1-2.5] and single health care workers were at higher risk (P = 0.048, OR = 1.4 and 95% CI = 1.02-2.0) compared to nurses and those who were married. Approximately 20% of the participants had IES scores >or=30, indicating the presence of post-traumatic stress disorder (PTSD). Four areas were classified as more important using factor analysis: health and relationship with the family, relationship with friends/colleagues, work and spiritual. The areas for coping strategies were clear directives/precautionary measures, ability to give feedback to/obtain support from management, support from supervisors/colleagues, support from the family, ability to talk to someone and religious convictions. Support from supervisors/colleagues was a significant negative predictor for psychiatric symptoms and PTSD. Work and clear communication of directives/precautionary measures also helped reduce psychiatric symptoms. CONCLUSIONS Many health care workers were emotionally affected and traumatized during the SARS outbreak. Hence, it is important for health care institutions to provide psychosocial support and intervention for their health care workers.

**Database:** Medline

# Interventions to support healthcare workers during covid-19

## 3a. Mental health care for medical staff in China during the COVID-19 outbreak.

**Author(s):** Chen, Qiongni; Liang, Mining; Li, Yamin; Guo, Jincai; Fei, Dongxue; Wang, Ling; He, Li; Sheng, Caihua; Cai, Yiwen; Li, Xiaojuan; Wang, Jianjian; Zhang, Zhanzhou

**Source:** The lancet. Psychiatry; Apr 2020; vol. 7 (no. 4); p. e15

**Publication Type(s):** Letter

Available at [The lancet. Psychiatry](https://auth.elsevier.com/ShibAuth/institutionLogin?entityID=https://idp.eng.nhs.uk/openathens&appReturnURL=https%3A%2F%2Fwww.clinicalkey.com%2Fcontent%2FplayBy%2Fdoi%2F%3Fv%3D10.1016%2FS2215-0366(20)30078-X) - from ClinicalKey

Available at [The lancet. Psychiatry](http://www.thelancet.com/article/S221503662030078X/pdf) - from Unpaywall

**Database:** Medline

## 3b. Doctors' wellbeing: self-care during the covid-19 pandemic

**Author(s):** Unadkat S.; Farquhar M.

**Source:** BMJ (Clinical research ed.); Mar 2020; vol. 368

Available at [BMJ (Clinical research ed.)](https://go.openathens.net/redirector/nhs?url=https%3A%2F%2Fwww.bmj.com%2Flookup%2Fdoi%2F10.1136%2Fbmj.m1150) - from BMJ Journals

Available at [BMJ (Clinical research ed.)](https://www.bmj.com/content/bmj/368/bmj.m1150.full.pdf) - from Unpaywall

**Database:** EMBASE

# Interventions to support healthcare workers during ebola, SARS, and swine flu

## 4a. Maximizing the resilience of healthcare workers in multi-hazard events: Lessons from the 2014–2015 Ebola response in Africa

**Author(s):** Schreiber, Merritt; Cates, David S; Formanski, Stephen; King, Michael

**Source:** Military Medicine; 2019; vol. 184 (no. Suppl)

Available at [Military medicine](http://search.ebscohost.com/login.aspx?direct=true&scope=site&site=ehost-live&db=mdc&AN=30901435) - from EBSCO (MEDLINE Complete)

Available at [Military medicine](https://academic.oup.com/milmed/article-pdf/184/Supplement_1/114/31616224/usy400.pdf) - from Unpaywall

There is increasing knowledge that health care workers (HCWs) can experience a variety of emotional impacts when responding to disasters and terrorism events. The Anticipate, Plan and Deter (APD) Responder Risk and Resilience Model was developed to provide a new, evidence-informed method for understanding and managing psychological impacts among HCWs. APD includes pre-deployment development of an individualized resilience plan and an in-theater, real-time self-triage system, which together allow HCWs to assess and manage the full range of psychological risk and resilience for themselves and their families. The inclusion of objective mental health risk factors to prompt activation of a coping plan, in connection with unit leadership real-time situational awareness, enables the first known evidence-driven "targeted action" plan to address responder risk early before Post Traumatic Stress Disorder and impairment become established. This paper describes pilot work using the self-triage system component in Alameda County’s Urban Shield and the Philippines’ Typhoon Haiyan, and then reports a case example of the full APD model implementation in West Africa’s Ebola epidemic.

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## 4b. NMC will take into account the pressures of swine flu pandemic.

**Author(s):** Harrison S; Snow T

**Source:** Nursing Standard; Oct 2009; vol. 24 (no. 7); p. 10-10

Available at [Nursing Standard](http://gateway.proquest.com/openurl?ctx_ver=Z39.88-2004&res_id=xri:pqm&req_dat=xri:pqil:pq_clntid=145298&rft_val_fmt=ori/fmt:kev:mtx:journal&genre=article&issn=0029-6570&volume=24&issue=7&spage=10) - from ProQuest (Health Research Premium) - NHS Version

The Nursing and Midwifery Council (NMC) will consider extraordinary pressures endured by nurses if they are reported to the regulator during the swine flu pandemic.

**Database:** CINAHL

## 4c. Coping responses of emergency physicians and nurses to the 2003 severe acute respiratory syndrome outbreak.

**Author(s):** Phua, D H; Tang, H K; Tham, K Y

**Source:** Academic emergency medicine : official journal of the Society for Academic Emergency Medicine; Apr 2005; vol. 12 (no. 4); p. 322-328

Available at [Academic emergency medicine : official journal of the Society for Academic Emergency Medicine](https://onlinelibrary.wiley.com/resolve/openurl?genre=article&sid=TDnet&issn=1069-6563&date=2005&volume=12&issue=4&spage=322) - from Wiley Online Library

OBJECTIVES During the 2003 severe acute respiratory syndrome (SARS) outbreak, health care workers (HCWs) experienced unusual stressors. The study hospital introduced psychosocial interventions to help HCWs. This study aimed to examine the coping strategies adopted by the emergency department (ED) HCWs who cared for the SARS patients. METHODS In November 2003, a self-administered questionnaire of physicians and nurses was conducted in the hospital ED that is the national SARS screening center in Singapore. Data collected included demographics and responses to these instruments: 1) the Coping Orientation to Problems Experienced (COPE) to assess coping strategies, 2) the Impact of Event Scale (IES) to measure psychological reactions, and 3) the General Health Questionnaire 28 (GHQ 28) to measure psychiatric morbidity. RESULTS Thirty-eight of 41 (92.7%) physicians and 58 of 83 (69.9%) nurses responded. The respondents reported a preference for problem-focused and emotion-focused coping measures. The physicians chose humor as a coping response significantly more frequently (p < 0.001) than nurses, scoring 9.61/16 (95% CI = 8.52 to 10.69), compared with the nurses' score of 7.05/16 (95% CI = 6.28 to 7.83). The Filipino HCWs turned to religion as a coping response significantly more frequently (p < 0.001) than the non-Filipino HCWs, scoring 14.38/16 (95% CI = 13.33 to 15.42), compared with 9.93/16 (95% CI = 9.00 to 10.87) for the non-Filipinos. Psychiatric morbidity was 17.7% on the IES and 18.8% on the GHQ 28, with the trend for physicians to report lower psychiatric morbidity. CONCLUSIONS With a supportive hospital environment, ED HCWs chose adaptive coping in response to the outbreak and reported low psychiatric morbidity. Physicians chose humor and Filipinos chose turning to religion as their preferred responses. Psychosocial interventions to help HCWs need to take these preferences into account.

**Database:** Medline

## 4d. The experience of the 2003 SARS outbreak as a traumatic stress among frontline healthcare workers in Toronto: lessons learned.

**Author(s):** Maunder, Robert

**Source:** Philosophical transactions of the Royal Society of London. Series B, Biological sciences; Jul 2004; vol. 359 (no. 1447); p. 1117-1125

The outbreak of severe acute respiratory syndrome (SARS) in the first half of 2003 in Canada was unprecedented in several respects. Understanding the psychological impact of the outbreak on healthcare workers, especially those in hospitals, is important in planning for future outbreaks of emerging infectious diseases. This review draws upon qualitative and quantitative studies of the SARS outbreak in Toronto to outline the factors that contributed to healthcare workers' experiencing the outbreak as a psychological trauma. Overall, it is estimated that a high degree of distress was experienced by 29-35% of hospital workers. Three categories of contributory factors were identified. Relevant contextual factors were being a nurse, having contact with SARS patients and having children. Contributing attitudinal factors and processes were experiencing job stress, perceiving stigmatization, coping by avoiding crowds and colleagues, and feeling scrutinized. Pre-existing trait factors also contributed to vulnerability. Lessons learned from the outbreak include: (i) that effort is required to mitigate the psychological impact of infection control procedures, especially the interpersonal isolation that these procedures promote; (ii) that effective risk communication is a priority early in an outbreak; (iii) that healthcare workers may have a role in influencing patterns of media coverage that increase or decrease morale; (iv) that healthcare workers benefit from resources that facilitate reflection on the effects of extraordinary stressors; and (v) that healthcare workers benefit from practical interventions that demonstrate tangible support from institutions.

**Database:** Medline

## 4e. The psychological impact of SARS on health care providers

**Author(s):** Khee K.S.; Lee L.B.; Chai O.T.; Loong C.K.; Ming C.W.; Kheng T.H.

**Source:** Critical Care and Shock; May 2004; vol. 7 (no. 2); p. 99-106

The Severe Acute Respiratory Syndrome (SARS) triggered a devastating and deadly outbreak in Singapore. The impact that this deadly disease caused was like no other; healthcare facilities were overwhelmed with patients, healthcare providers continuously fell victims of the disease, and the uncertainty of the natural history of the disease kept the world in a general state of panic. Though numerous studies have been developed regarding SARS, this study focuses on the emotional issues that healthcare providers faced during the outbreak. During the time of the study and in the midst of the outbreak, the psychology team developed a program for mental health among healthcare providers. The program consisted of group session therapy where a total of 16 groups were developed mainly comprised of nurses and physicians. The emotional stress that healthcare providers faced during the outbreak was overwhelming creating confusion and mixed emotions that made their jobs an extraordinary challenge.

**Database:** EMBASE

# Causes of impact of covid-19 on healthcare workers

## 5a. Impact on Mental Health and Perceptions of Psychological Care among Medical and Nursing Staff in Wuhan during the 2019 Novel Coronavirus Disease Outbreak: a Cross-sectional Study.

**Author(s):** Kang L, et al.

**Source:** Brain Behav Immun. 2020 Mar 30. pii: S0889-1591(20)30348-2. doi: 10.1016/j.bbi.2020.03.028. [Epub ahead of print]

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7118532/>

The severe 2019 outbreak of novel coronavirus disease (COVID-19), which was first reported in Wuhan, would be expected to impact the mental health of local medical and nursing staff and thus lead them to seek help. However, those outcomes have yet to be established using epidemiological data. To explore the mental health status of medical and nursing staff and the efficacy, or lack thereof, of critically connecting psychological needs to receiving psychological care, we conducted a quantitative study. This is the first paper on the mental health of medical and nursing staff in Wuhan. Notably, among 994 medical and nursing staff working in Wuhan, 36.9% had subthreshold mental health disturbances (mean PHQ-9: 2.4), 34.4% had mild disturbances (mean PHQ-9: 5.4), 22.4% had moderate disturbances (mean PHQ-9: 9.0), and 6.2% had severe disturbance (mean PHQ-9: 15.1) in the immediate wake of the viral epidemic. The noted burden fell particularly heavily on young women. Of all participants, 36.3% had accessed psychological materials (such as books on mental health), 50.4% had accessed psychological resources available through media (such as online push messages on mental health self-help coping methods), and 17.5% had participated in counseling or psychotherapy. Trends in levels of psychological distress and factors such as exposure to infected people and psychological assistance were identified. Although staff accessed limited mental healthcare services, distressed staff nonetheless saw these services as important resources to alleviate acute mental health disturbances and improve their physical health perceptions. These findings emphasize the importance of being prepared to support frontline workers through mental health interventions at times of widespread crisis.

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## 5b. Vicarious traumatization in the general public, members, and non-members of medical teams aiding in COVID-19 control

**Author(s):** Li Z.; Ge J.; Yang M.; Feng J.; Qiao M.; Pan Y.; Liu S.; Zhang H.; Liu C.; Yang C.; Jiang R.; Zhou Q.; Bi J.; Zhan G.; Xu X.; Wang L.; Zhou C.; Yang J.; Zhu B.; Hu Y.; Hashimoto K.; Jia Y.; Wang H.; Wang R.

**Source:** Brain, Behavior, and Immunity; 2020

Available at [Brain, behavior, and immunity](https://auth.elsevier.com/ShibAuth/institutionLogin?entityID=https://idp.eng.nhs.uk/openathens&appReturnURL=https%3A%2F%2Fwww.clinicalkey.com%2Fcontent%2FplayBy%2Fdoi%2F%3Fv%3D10.1016%2Fj.bbi.2020.03.007) - from ClinicalKey

Available at [Brain, behavior, and immunity](https://doi.org/10.1016/j.bbi.2020.03.007) - from Unpaywall

Since December 2019, more than 79,000 people have been diagnosed with infection of the Corona Virus Disease 2019 (COVID-19). A large number of medical staff was sent to Wuhan city and Hubei province to aid COVID-19 control. Psychological stress, especially vicarious traumatization caused by the COVID-19 pandemic, should not be ignored. To address this concern, the study employed a total of 214 general public and 526 nurses (i.e., 234 front-line nurses and 292 non-front-line nurses) to evaluate vicarious traumatization scores via a mobile app-based questionnaire. Front-line nurses are engaged in the process of providing care for patients with COVID-19. The results showed that the vicarious traumatization scores for front-line nurses including scores for physiological and psychological responses, were significantly lower than those of non-front-line nurses (P < 0.001). Interestingly, the vicarious traumatization scores of the general public were significantly higher than those of the front-line nurses (P < 0.001); however, no statistical difference was observed compared to the scores of non-front-line nurses (P > 0.05). Therefore, increased attention should be paid to the psychological problems of the medical staff, especially non-front-line nurses, and general public under the situation of the spread and control of COVID-19. Early strategies that aim to prevent and treat vicarious traumatization in medical staff and general public are extremely necessary. Copyright © 2020 Elsevier Inc.

**Database:** EMBASE

## 5c. The Effects of Social Support on Sleep Quality of Medical Staff Treating Patients with Coronavirus Disease 2019 (COVID-19) in January and February 2020 in China.

**Author(s):** Xiao, Han; Zhang, Yan; Kong, Desheng; Li, Shiyue; Yang, Ningxi

**Source:** Medical science monitor : international medical journal of experimental and clinical research; Mar 2020; vol. 26 ; p. e923549

Available at [Medical science monitor : international medical journal of experimental and clinical research](http://europepmc.org/search?query=(DOI:10.12659/MSM.923549)) - from Europe PubMed Central - Open Access

Available at [Medical science monitor : international medical journal of experimental and clinical research](http://search.ebscohost.com/login.aspx?direct=true&scope=site&site=ehost-live&db=mdc&AN=32132521) - from EBSCO (MEDLINE Complete)

BACKGROUND Coronavirus disease 2019 (COVID-19), formerly known as severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) and 2019 novel coronavirus (2019-nCoV), was first identified in December 2019 in Wuhan City, China. Structural equation modeling (SEM) is a multivariate analysis method to determine the structural relationship between measured variables. This observational study aimed to use SEM to determine the effects of social support on sleep quality and function of medical staff who treated patients with COVID-19 in January and February 2020 in Wuhan, China. MATERIAL AND METHODS A one-month cross-sectional observational study included 180 medical staff who treated patients with COVID-19 infection. Levels of anxiety, self-efficacy, stress, sleep quality, and social support were measured using the and the Self-Rating Anxiety Scale (SAS), the General Self-Efficacy Scale (GSES), the Stanford Acute Stress Reaction (SASR) questionnaire, the Pittsburgh Sleep Quality Index (PSQI), and the Social Support Rate Scale (SSRS), respectively. Pearson's correlation analysis and SEM identified the interactions between these factors. RESULTS Levels of social support for medical staff were significantly associated with self-efficacy and sleep quality and negatively associated with the degree of anxiety and stress. Levels of anxiety were significantly associated with the levels of stress, which negatively impacted self-efficacy and sleep quality. Anxiety, stress, and self-efficacy were mediating variables associated with social support and sleep quality. CONCLUSIONS SEM showed that medical staff in China who were treating patients with COVID-19 infection during January and February 2020 had levels of anxiety, stress, and self-efficacy that were dependent on sleep quality and social support.

**Database:** Medline

# Case studies

## 6a. SARS the aftermath: for some nurses, contracting SARS had unexpected consequences.

**Author(s):** Stringer H

**Source:** NurseWeek (15475131); Apr 2008; vol. 15 (no. 8); p. 30-31

The 2003 SARS outbreak claimed several lives. Many of those who contracted SARS -- but survived -- continue to battle health problems, such as fatigue, shortness of breath, anxiety, and depression, that seems to stem from the initial infection.

**Database:** CINAHL

## 6b. SARS nurses shunned after recovery.

**Source:** Nursing Standard; Sep 2004; vol. 18 (no. 51); p. 4-4

Available at [Nursing Standard](http://gateway.proquest.com/openurl?ctx_ver=Z39.88-2004&res_id=xri:pqm&req_dat=xri:pqil:pq_clntid=145298&rft_val_fmt=ori/fmt:kev:mtx:journal&genre=article&issn=0029-6570&volume=18&issue=51&spage=4) - from ProQuest (Health Research Premium) - NHS Version

**Database:** CINAHL

## 6c. SARS unmasked: a report on the nursing experience with SARS in Toronto

Registered Nurses Association of Ontario (2003).

<http://www.archives.gov.on.ca/en/e_records/sars/hearings/01Mon.pdf/Mon_10_45_RNAO.pdf>

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**Databases searched:** MEDLINE, EMBASE, Cinahl, PsycInfo, PubMed, Health Service Journal, Google, Evidence for Policy and Practice Information and Co-Ordinating Centre.

**Search History:**

|  |  |  |  |
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| 85 | Medline | (occupational ADJ therapists).ti,ab | 4255 |
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| 171 | Medline | (sars-cov\*).ti,ab | 2777 |
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| 201 | CINAHL | (occupational ADJ therapists).ti,ab | 8270 |
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| 208 | CINAHL | (burn-out).ti,ab | 327 |
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| 229 | CINAHL | (ncov).ti,ab | 9 |
| 230 | CINAHL | (sars-cov\*).ti,ab | 101 |
| 231 | CINAHL | exp CORONAVIRIDAE/ | 764 |
| 232 | CINAHL | exp "CORONAVIRIDAE INFECTIONS"/ | 2956 |
| 233 | CINAHL | (sars OR "severe acute respiratory").ti,ab | 3186 |
| 234 | CINAHL | (mers OR "middle east respiratory" OR "middle eastern respiratory").ti,ab | 1130 |
| 237 | CINAHL | (pandemic\* OR epidemic\*).ti | 11630 |
| 238 | CINAHL | (227 OR 228 OR 229 OR 230 OR 231 OR 232 OR 233 OR 234 OR 237) | 16786 |
| 239 | CINAHL | (225 AND 226 AND 238) | 186 |
| 240 | CINAHL | 239 [DT 2001-2020] | 174 |
| 241 | PsycINFO | 194 [DT 2001-2020] | 71 |
| 242 | EMBASE | ("healthcare personnel" OR "health care personnel" OR "health personnel").ti | 1798 |
| 243 | EMBASE | ("healthcare staff" OR "health care staff" OR "health staff").ti | 600 |
| 244 | EMBASE | (nurses).ti,ab | 206591 |
| 245 | EMBASE | (doctors).ti,ab | 109035 |
| 246 | EMBASE | (physicians).ti,ab | 350634 |
| 247 | EMBASE | (physiotherapists).ti,ab | 10000 |
| 248 | EMBASE | (occupational ADJ therapists).ti,ab | 6592 |
| 249 | EMBASE | (physical ADJ therapists).ti,ab | 5765 |
| 250 | EMBASE | exp \*"HEALTH CARE PERSONNEL"/ | 494384 |
| 251 | EMBASE | (support OR recovery).ti | 186274 |
| 252 | EMBASE | (aftermath OR debrief\* OR de-brief\*).ti,ab | 12362 |
| 253 | EMBASE | (burnout).ti,ab | 13019 |
| 254 | EMBASE | (burn-out).ti,ab | 1152 |
| 255 | EMBASE | "SOCIAL SUPPORT"/ | 87242 |
| 256 | EMBASE | exp PSYCHOTHERAPY/ | 242729 |
| 257 | EMBASE | exp COUNSELING/ | 160085 |
| 258 | EMBASE | WELLBEING/ | 60190 |
| 259 | EMBASE | "PSYCHOLOGICAL WELL-BEING"/ | 16636 |
| 260 | EMBASE | "PHYSICAL WELL-BEING"/ | 1616 |
| 261 | EMBASE | exp "JOB STRESS"/ | 8858 |
| 262 | EMBASE | "WORK ENVIRONMENT"/ | 23708 |
| 263 | EMBASE | "SOCIAL ENVIRONMENT"/ | 32214 |
| 264 | EMBASE | exp "STRESS MANAGEMENT"/ | 4859 |
| 265 | EMBASE | "COPING BEHAVIOR"/ | 56083 |
| 266 | EMBASE | "PSYCHOLOGICAL RESILIENCE"/ | 2735 |
| 267 | EMBASE | "PSYCHOLOGICAL ADJUSTMENT"/ | 973 |
| 268 | EMBASE | PSYCHOTRAUMA/ | 8367 |
| 269 | EMBASE | exp "HEALTH CARE PERSONNEL MANAGEMENT"/ | 2764 |
| 270 | EMBASE | exp "OCCUPATIONAL HEALTH SERVICE"/ | 9744 |
| 271 | EMBASE | "OCCUPATIONAL HEALTH"/ | 40283 |
| 273 | EMBASE | exp "HEALTH PERSONNEL ATTITUDE"/ | 180433 |
| 274 | EMBASE | (242 OR 243 OR 244 OR 245 OR 246 OR 247 OR 248 OR 249 OR 250 OR 273) | 1125586 |
| 275 | EMBASE | (covid-19).ti,ab | 1452 |
| 276 | EMBASE | (wuhan ADJ2 coronavir\*).ti,ab | 21 |
| 277 | EMBASE | (ncov).ti,ab | 342 |
| 278 | EMBASE | (sars-cov\*).ti,ab | 2950 |
| 279 | EMBASE | exp CORONAVIRIDAE/ | 12703 |
| 280 | EMBASE | exp "CORONAVIRIDAE INFECTION"/ | 11511 |
| 281 | EMBASE | (sars OR "severe acute respiratory").ti,ab | 12761 |
| 282 | EMBASE | (mers OR "middle east respiratory" OR "middle eastern respiratory").ti,ab | 4915 |
| 283 | EMBASE | \*PANDEMIC/ | 2608 |
| 284 | EMBASE | \*EPIDEMIC/ | 32261 |
| 285 | EMBASE | (pandemic\* OR epidemic\*).ti | 37490 |
| 286 | EMBASE | (275 OR 276 OR 277 OR 278 OR 279 OR 280 OR 281 OR 282 OR 283 OR 284 OR 285) | 84721 |
| 287 | EMBASE | (251 OR 252 OR 253 OR 254 OR 255 OR 256 OR 257 OR 258 OR 259 OR 260 OR 261 OR 262 OR 263 OR 264 OR 265 OR 266 OR 267 OR 268 OR 269 OR 270 OR 271) | 870375 |
| 288 | EMBASE | (274 AND 286 AND 287) | 247 |
| 289 | EMBASE | 288 [DT 2001-2020] | 223 |

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