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Morning Brief : Scientific Review

11 May 2020

The purpose of the Morning Brief is to **summarise** and present key information, research articles and other relevant publications pertaining to critical care and COVID-19. We aim to prioritise information, articles and publications released in the preceding 24-48 hours

Stellenbosch University Research Response Team

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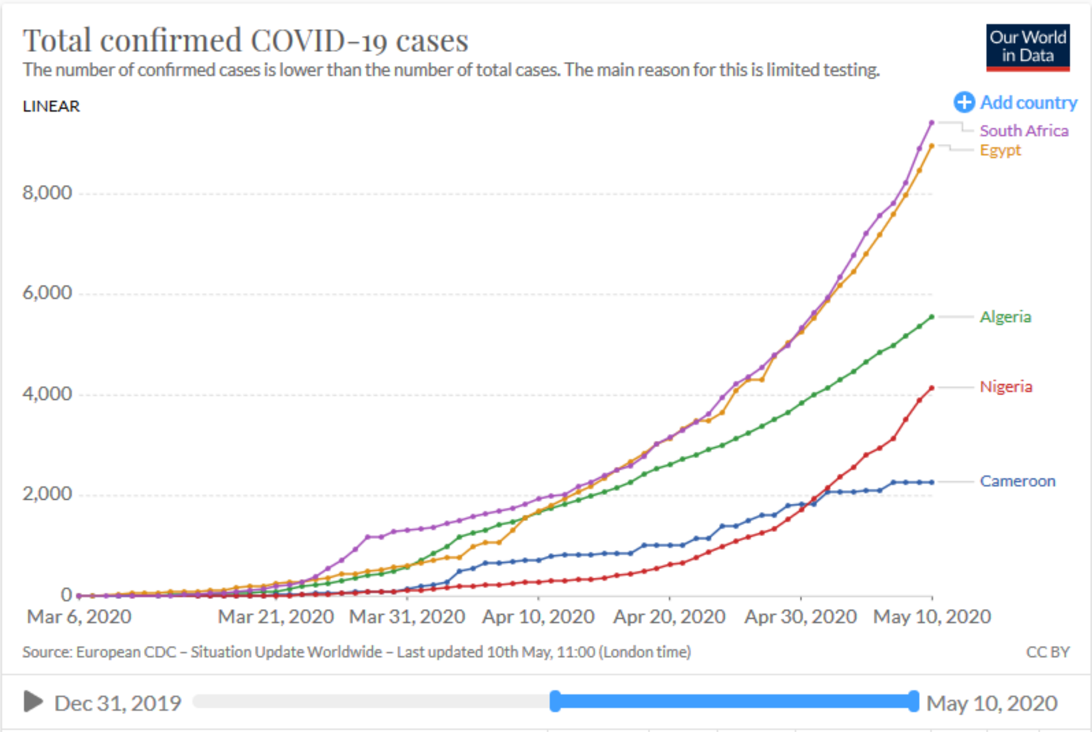
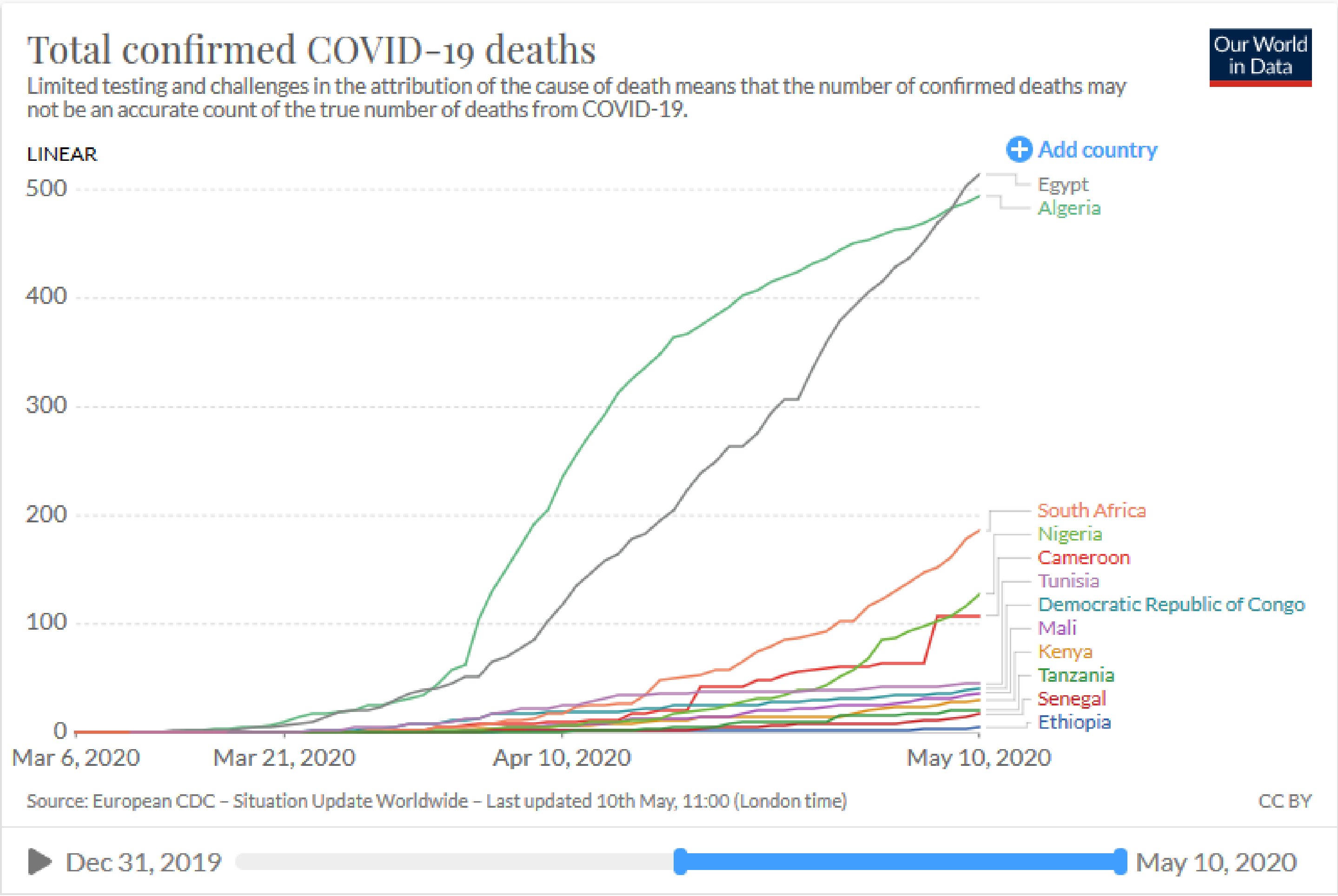
Content of the brief

- Global Statistics
- South African Statistics
- Topic: Adherence to IPC and Psychological effects on HCWs

Global Statistics





Accessed at 20:23 on 10 May 2020
Source: https://ourworldindata.org

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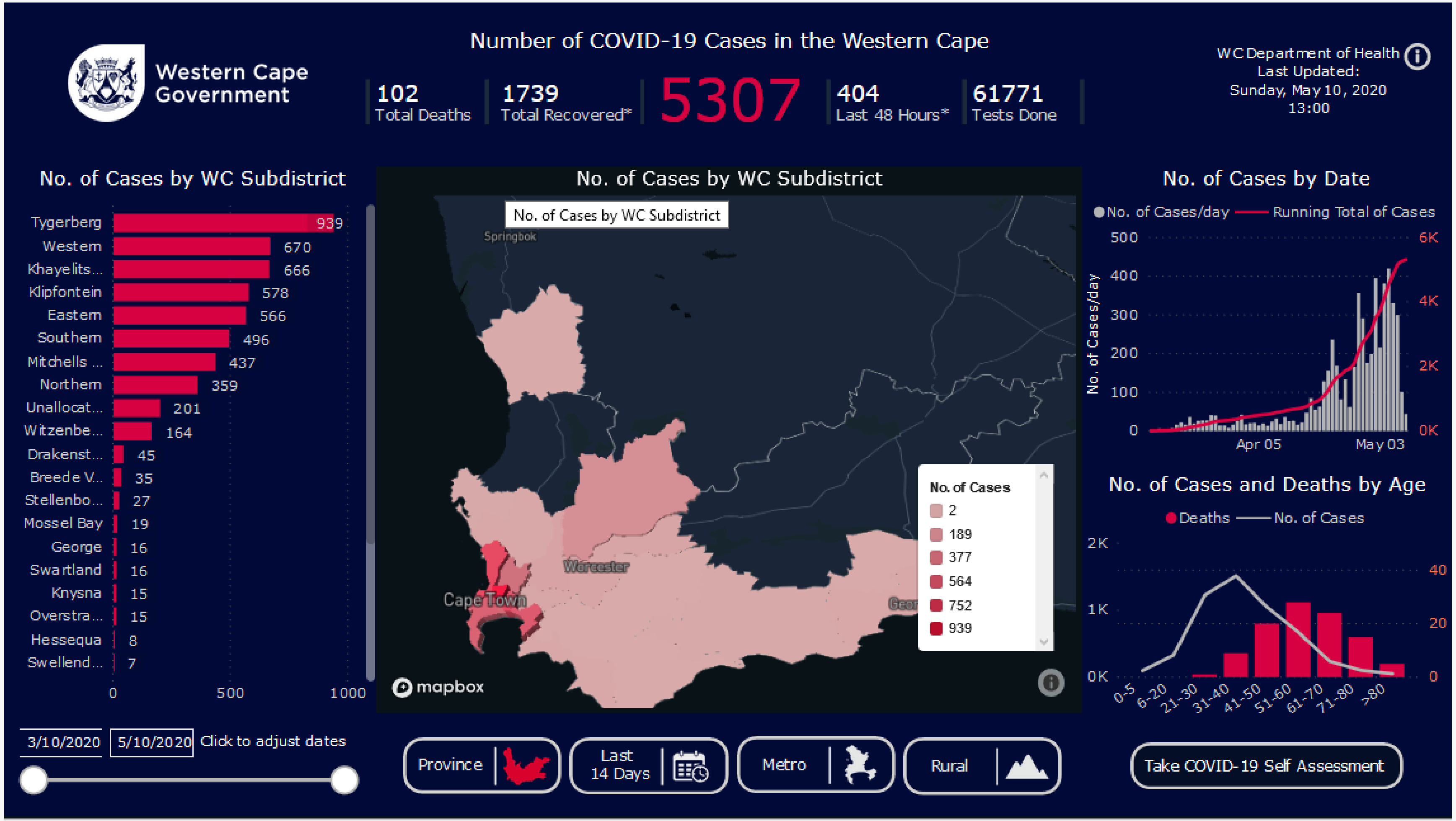
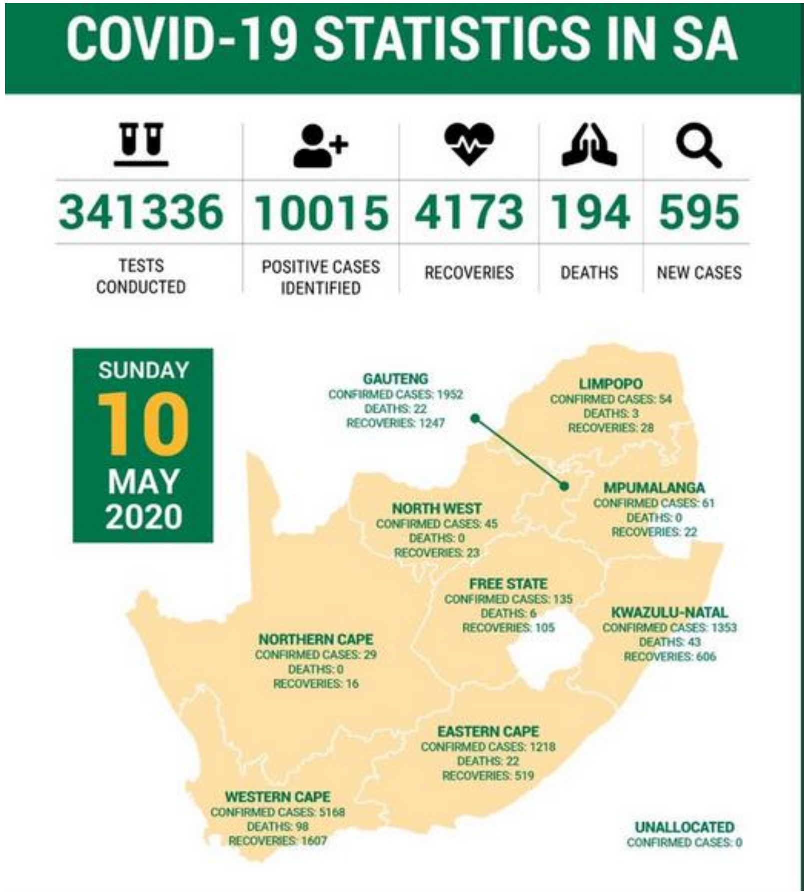
South African Statistics





Accessed at 20:55 on 7 May 2020

Source: https://coronavirus.westerncape.gov.za/covid-19-dashboard

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Articles of Interest

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Cochrane Library

Cochrane Database of Systematic Reviews

Aim was identifying barriers and facilitators to IPC guideline adherence
Focused on healthcare workers' views and experiences with regards to infection prevention and control

Methods

1 database searched

We included qualitative and mixed-methods studies (with a distinct qualitative component) that focused on the experiences and perceptions of healthcare workers towards factors that impact on their ability to adhere to IPC guidelines for respiratory infectious diseases.

Quality of studies assessed with GRADE-CERQual (Confidence in the Evidence from Reviews of Qualitative research) tool

Barriers and facilitators to healthcare workers' adherence with infection prevention and control (IPC) guidelines for respiratory infectious diseases: a rapid qualitative evidence synthesis (Review)

Houghton C, Meskell P, Delaney H, Smalle M, Glenton C, Booth A, Chan XHS, Devane D, Biesty LM

Included studies

20 studies included

10 Asia, 4 Africa, 4 America, 2 Australia

8 from low or middle income countries

15 in hospital settings

SARS, MERS, H1N1, TB, Influenza

14 studies nurses, 9 doctors

Houghton C, et al., Barriers and facilitators to healthcare workers' adherence with infection prevention and control (IPC) guidelines for respiratory infectious diseases: a rapid qualitative evidence synthesis. *Cochrane Database of Systematic Reviews* 2020, Issue 4. Art. No.: CD013582. DOI: 10.1002/14651858.CD013582.

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Finding 1: Healthcare workers perceived their response to guideline protocols being influenced by the level of support that they received from their management team

Moderate confidence

Finding 2: If healthcare workers considered that the IPC guidelines were long, ambiguous or did not reflect international guidance, they described feeling unsure as to which IPC guidance they should adhere to

Finding 3: With guidelines changing so frequently, healthcare workers felt overwhelmed and often were not able to keep up with the most recent guidance

Finding 5: The increased workload and healthcare worker fatigue associated with IPC guidelines, such as donning PPE and additional cleaning, were seen as a barrier to adherence

Organisational factors

- Safety climate
- Communication of IPC guidelines
- Availability of training programmes

Environmental factors

- Physical environment
- Availability of PPE

Individual factors

- Individual knowledge
- Individual attitudes
- Individual beliefs
- Discomfort of PPE

Houghton C, et al., Barriers and facilitators to healthcare workers' adherence with infection prevention and control (IPC) guidelines for respiratory infectious diseases: a rapid qualitative evidence synthesis. *Cochrane Database of Systematic Reviews* 2020, Issue 4. Art. No.: CD013582. DOI: 10.1002/14651858.CD013582.

Finding 6: Clear communication strategies and sharing new information within organisations were seen as vital for the successful implementation of IPC guidelines

High confidence

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High confidence

Finding 8: Lack of training about the specific infection and how to use PPE was seen to contribute to poor implementation of IPC guidelines

Finding 9: Where training was not mandatory and performance was not assessed in practice, healthcare workers felt this contributed to lack of adherence to IPC guidelines

Moderate confidence

Finding 11: A healthcare facility environment with sufficient space to isolate patients was regarded as a key facilitator for healthcare workers' ability to adhere to infection control methods

Moderate confidence

Finding 12: Lack of provision of adequate ventilation, isolation rooms, anterooms and shower facilities within the healthcare setting was
viewed as a barrier to achieving IPC measures

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Finding 15: Inadequate supplies of appropriate PPE, of a required standard, to ensure patient safety was perceived by healthcare workers and managers as a serious concern

Moderate confidence

Finding 16: Healthcare workers identified that the need for PPE increases as disease outbreaks intensify, therefore PPE supply lines should be adjusted to anticipate and meet increasing needs as outbreaks continue

Moderate confidence

Finding 19: While healthcare workers appreciated that they had an individual responsibility to increase their knowledge, they need the evidence, rationale and support to do so

Moderate confidence

Finding 20: The use of PPE, particularly masks, was not always recognised as important for healthcare workers, thus hindering adherence to IPC guidelines

Moderate confidence

Finding 21: When healthcare workers felt they placed a high value on the importance of IPC; they had increased adherence, and incorporated IPC more intuitively in to routine practice

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Finding 22: healthcare workers' fear of infecting themselves or others was seen as facilitating their adherence to IPC guidelines

Moderate confidence

Finding 23: Patient isolation and use of face masks could be perceived as frightening and stigmatising for patients, thus reducing their use

Moderate confidence

Finding 24: The workplace culture, and influence of colleagues, was seen to act as either a barrier or a facilitator to adherence to IPC guidelines

Moderate confidence

Finding 26: The discomfort of wearing PPE was believed to reduce healthcare workers' adherence to their use, and it was suggested that ensuring proper fit could help to overcome this barrier

High confidence

Houghton C, et al., Barriers and facilitators to healthcare workers' adherence with infection prevention and control (IPC) guidelines for respiratory infectious diseases: a rapid qualitative evidence synthesis. *Cochrane Database of Systematic Reviews* 2020, Issue 4. Art. No.: CD013582. DOI: 10.1002/14651858.CD013582.

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Research

Occurrence, prevention, and management of the psychological effects of emerging virus outbreaks on healthcare workers: rapid review and meta-analysis

BMJ 2020 ; 369 doi: https://doi.org/10.1136/bmj.m1642 (Published 05 May 2020)
Cite this as: *BMJ* 2020;369:m1642

Background

SARS, 2009, 24 countries affected, most severe in China, Taiwan, Hong Kong, Canada

8000+ cases, 800+ deaths

MERS, 2012, Saudi Arabia

2500+ cases, 800+ deaths

Methods

Rapid review of the psychological effects on clinicians working in past outbreaks and measures that successfully managed these effects

7 databases systematically searched, plus medRxiv

2 authors extracted data independently

Included any study that described the psychological reactions of healthcare staff working with patients in an outbreak of any emerging virus in any clinical setting

Outbreaks included: SARS, MERS, H1N1, H7N9, Ebola virus disease, and covid-19

Excluded studies of healthcare care workers who contracted viral disease

Assessed quality of studies with Joanna Briggs Institute tool for non-randomised studies and modified framework from the Cochrane Musculoskeletal Group

Kisely Steve, Warren Nicola, McMahon Laura, Dalais Christine, Henry Irene, Siskind Dan et al. Occurrence, prevention, and management of the psychological effects of emerging virus outbreaks on healthcare workers: rapid review and meta-analysis BMJ 2020; 369 :m1642

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Results

Included studies all qualitative, cohort or cross-sectional

59 papers included:

37 SARS, 8 Covid-19, 7 MERS, 3 Ebola, 3 H1N1, 1 H7N9

45 during outbreak, 14 with up to 3 years follow-up

Study quality fair in most studies, most common problem confounding in cross-sectional and cohort designs

Wide range of tools used to assess psychosocial outcomes

38 studies compared psychological outcomes between healthcare workers who were in direct contact with affected patients and those who had little or no contact

Higher psychosocial morbidity in workers with direct contact to patients than in those not

Healthcare workers higher phychosocial morbidity than general population

Increased levels of distress reported both during and after outbreak – up to three years in one study.

Nurses more likely to adhere to infection control procedures.

Most consistent findings across studies: clear communication, training around infectious diseases, enforcement of infection control procedures, adequate PPE supplies, access to psychological interventions.

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Box 1: Factors that increase risk of adverse psychological outcomes

Individual factors

- *Clinical*
  - Increased contact with affected patients[6,14,16-18,23,25,26,31,33,36,38,39,41,44,47-49,53,55,56,58-60,62-64,66,67,70]
  - Precautionary measures creating perceived impediment to doing job[50,64]
  - Forced redeployment to look after affected patients[35,55]
  - Higher risk among nurses*[6,23,30,41,50,55,57,64-66]
- *Training and experience*
  - Inadequate training[6,42]
  - Lower levels of education[46]
  - Part time employee[50]
  - Less clinical experience[6,18,36,42]
- *Personal*
  - Increased time in quarantine[14,33,38,59,63,70]
  - Staff with children at home[41,66]
  - Personal lifestyle impacted by epidemic/pandemic[50]
  - Infected family member[25,29,59]
  - Single or social isolation[34,66,70]
  - Female sex†[6,16,23,26,29,36]
  - Lower household income[59,63]
  - Comorbid physical health conditions[29,40,55,67]
  - Younger age‡[32,50,55,59,69]
- *Psychological*
  - Lower perceived personal self-efficacy[40,42]
  - History of psychological distress, mental health disorders, or substance misuse[29,42,45,46,48,53,54,66,69]

Service factors

- Perceived lack of organisational support[12,38,47,48,55,66]
- Perceived lack of adequacy of training[48]
- Lack of confidence in infection control[37]
- No compensation for staff by organisation[13,43]

Societal factors

- Societal stigma against hospital workers[15,40,41,50,51,66]

All studies cited in box are high quality apart from references 13, 14, 26, 30, 39-41, 54, and 52.
*Two studies reported a higher risk for doctors[34,46] and 10 reported a higher risk for nurses.[6,23,30,41,50,55,57,64,65,66]
†Seven studies reported higher risk for women[6,16,23,26,29,36] and one reported higher risk for men.[14]
‡Five studies reported higher psychological distress among younger people[32,50,55,59,69] and two reported higher psychological distress in older people.[28,59]

Box 2: Factors that decrease risk of adverse psychological outcomes

Individual factors

- Frequent short breaks from clinical duties[40]
- Adequate time off work[32,33,43,60]
- Greater experience through years worked[36,42,66]
- Working in an administrative or managerial role[41,50]
- Self-perception of being adequately trained and supported[37,48]
- Faith in precautionary measures[35,40,50,52]
- Supportive peers[12,17,19,34,39,43,52,67]
- Family support[17,35,52]

Service factors

- Positive feedback to staff[38]
- Staff faith in service's infection control procedures[13,43,47,50]
- Provision of protective gear[13,17,29,41,43,52,55,58,66,67]
- Effective staff training in preparation for outbreaks[43,48]
- Staff support protocols[34,71]
- Clear communication with staff[31,34,52,55]
- No infection among staff after start of strict protective measures[13]
- Infected colleagues getting better[13]
- Access to tailored psychological interventions based on needs of individual staff[35,43,55,60,65]

Societal factors

- A general drop in disease transmission[13]

All studies cited in box are high quality apart from references 13, 40, 41, 45, 49, 52, and 54.

Box 3: Recommendations to deal with psychological problems in healthcare workers in novel outbreaks

Individual factors

- Staff "buddy" system to support personal precautionary measures[40]
- Encouragement among peers[43]
- Sufficient rest and time off[35,43]
- Opportunities for reflection on the effects of stress[56,66]
- Increased support from family and friends[16,17]

Service factors

- *Communication and training*
  - Clear communication with staff[12,30,33,34,38,56,66]
  - Training and education around infectious diseases[16,18,25,26,35,37,39,42,43]
- *Infection control*
  - Clear direction and enforcement of infection control procedures[13,23,34,35,40,41,43,67]
  - Screening stations to direct patients to relevant infection treatment clinics[56]
  - Sufficient supplies of adequate protective equipment[12,13,17,23,25,35,41,43,56,67]
  - Redesigning nursing care procedures that pose high risks for spread of infections[34,67]
  - Improving safety such as a better ventilation system or constructing or negative pressure rooms to isolate patients[34,67]
  - Reducing the density of patients on wards[34,67]
- *Psychological*
  - Recognition of staff efforts[13]
  - Training to deal with identification of and responses to psychological problems[22,28]
  - Minimising time in quarantine[22,33,38]
  - Access to psychological interventions[16,21,22,23,26,29,33,35,38,43,55,60,62,65]
- *Workload*
  - Appropriate work shifts and regular breaks[12,13,40,43]
  - Avoidance of compulsory assignment to caring for patients with coronavirus[35,55]
  - Rearranging hospital infrastructure, such as redeployment of wards and human resources[34,67]
  - Availability of hospital security to help deal with uncooperative patients[22]
- *Personal support*
  - Guaranteed food and daily living supplies[13,22,43]
  - Alternative accommodation for staff who are concerned about infecting their families[22,33,67]
  - Video facilities for staff to keep in contact with families and alleviate their concerns[22]

Societal factors

- Attention to media portrayal of healthcare workers[66]
- Minimisation of stigma and discrimination[15,40,41,50,51,66]

All studies cited in box are high quality apart from references 13, 26, 30, 39-41, 45, and 52

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Discussion

WHO Psychological first aid tool

- Practical care and support
- Basic needs – food, water
- Empathic listening
- Access to information
- Access to psychological service
- Protection from further harm

They highlight a study finding that psychological debriefing focusing on traumatic experiences is usually not helpful.

Discrimination and stigma identified in many studies

Limitations

Only 1 study from a low to middle income country included

Only 3 studies assessed interventions

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This summary was prepared by Dr E Maasdorp as part of the daily brief to the TBH ICU team.