



C19 National Foresight Group: Intelligence Briefing Paper 19

Data Trends and the Psychological Impacts of a second wave on Emergency Responders, Essential Workers and Frontline Staff

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This briefing synthesizes data with systematic findings from across academic subjects. This evidence of empirical data and academic insight contributes to our existing knowledge on who is most likely to be experiencing adversity in our communities.

Contents

Context.....	1
Who is this for?.....	1
Academic Insights:	2
Academic Synthesis	2
YouGov Mood.....	2
The psychological impact of Covid-19 on Emergency Responders, Essential Workers and Frontline and how can we support them through a second wave	5
Anxiety and Depression.....	8
Post-traumatic reactions.....	8
Burnout	9
Sleep Disturbance	9
Role of Government:	10
Role of Occupation Sector:.....	10
Role of the local employer:	10
Role of the individual:	10
What we do in this analysis, how and why (caution when interpreting).....	12

Context

A data review is undertaken by academics at Nottingham Trent University every week to inform the C19 National Foresight Group. Evidence related to Covid-19 psychological, social and economic trends are reviewed to inform, frame and prioritise discussions at national and local strategic decision-making level (LAs and LRFs). The C19 National Foresight Group synthesise data trends and academic findings across disciplines, with evidence of existing vulnerabilities and inequalities to start to build existing and emerging risk or adversity profiles of impacts from Covid-19.

Who is this for?

This is most useful for **national thought leaders, local strategic decision-makers, intel cells and those involved in populating the MAIC.**

Focussed theme this week: This week we are focussing on the psychological impact of Covid-19 on emergency responders and frontline workers. This has different interpretations in the context of the academic literature, and we propose a new inclusive definition and have applied this to the current



context.

Academic Insights:

We are providing a summary of work on the definitions of the psychological impact of Covid-19 on essential workers and frontline staff.

Academic Synthesis

(gathered from systematic literature reviews, rapid reviews, webpages, academic articles, pre-prints, academic expertise)

N.B. This is not a literature review, but a review of the broad area (balanced with Covid-19 specific literature) to see what topics lie within the area to inform future work. Predominantly based on systematic literature reviews and rapid reviews, this is to indicate the size of the literature review should we wish to commission one. Carried out by Adam Potter, Dr Stacey Stewart, and Rich Pickford, with revisions and edits by Dr Rowena Hill, NTU. Please contact us if you require a list of sources consulted to develop your own literature review. Our purpose is to provide an overview of the academic and research foresight on the developing areas of latent and emergent needs in the community.

YouGov Mood

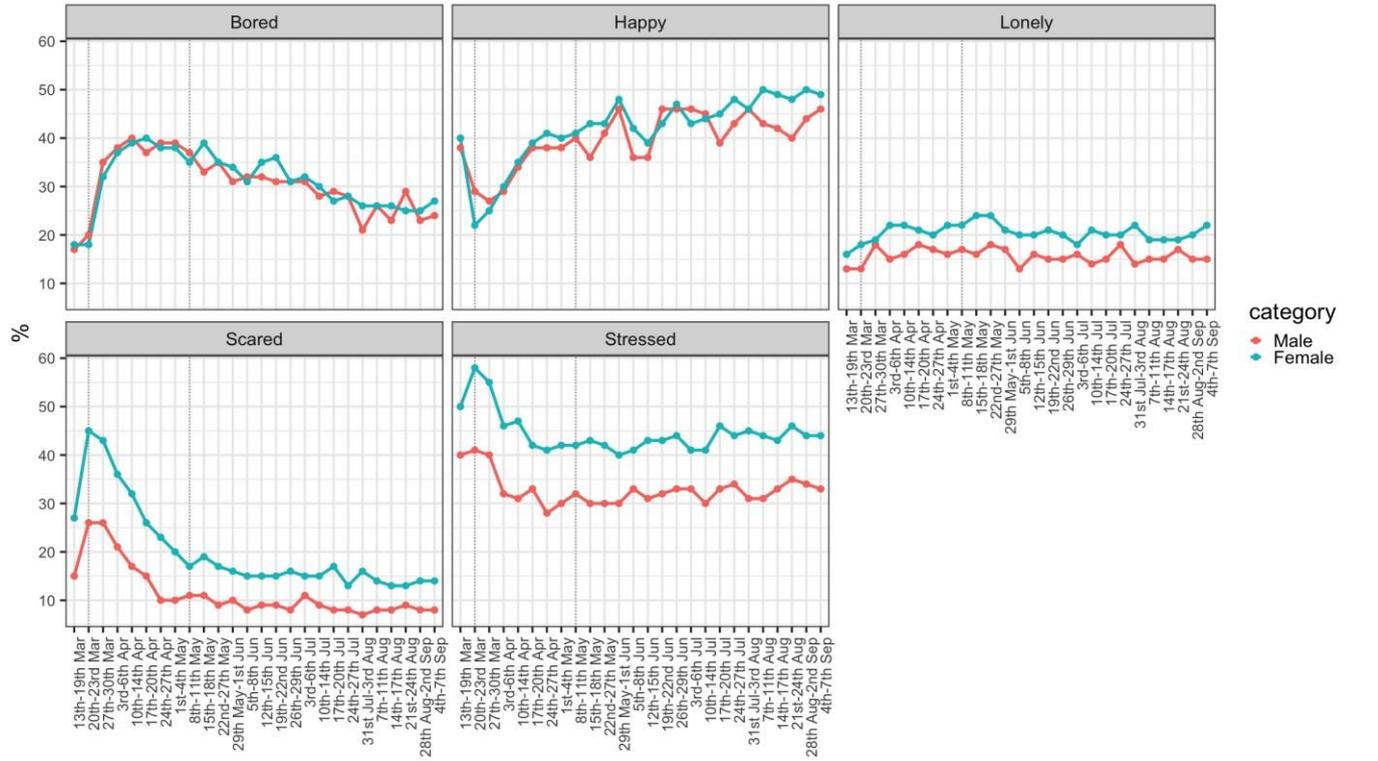
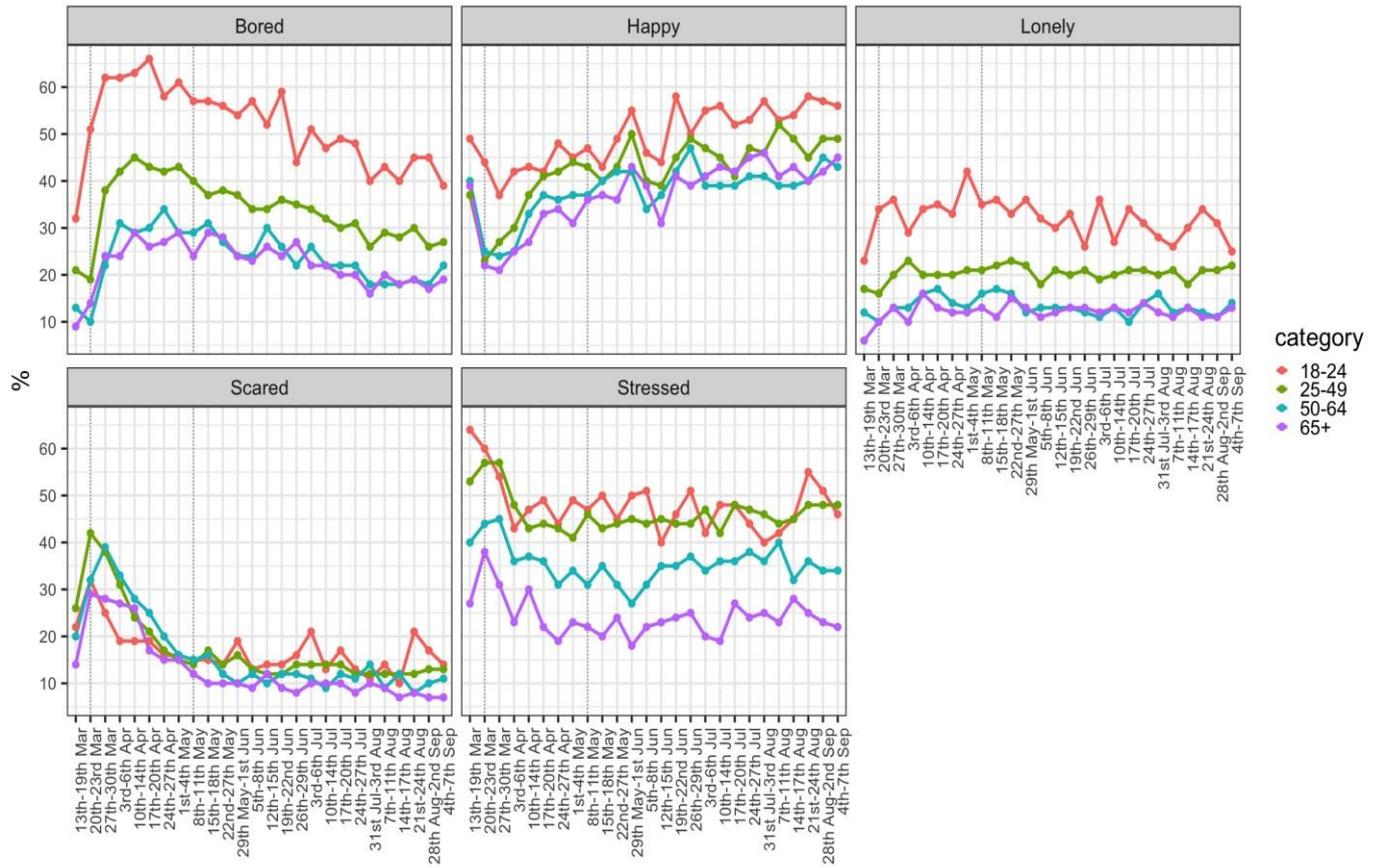
Data is up to and includes the 7th of September 2020

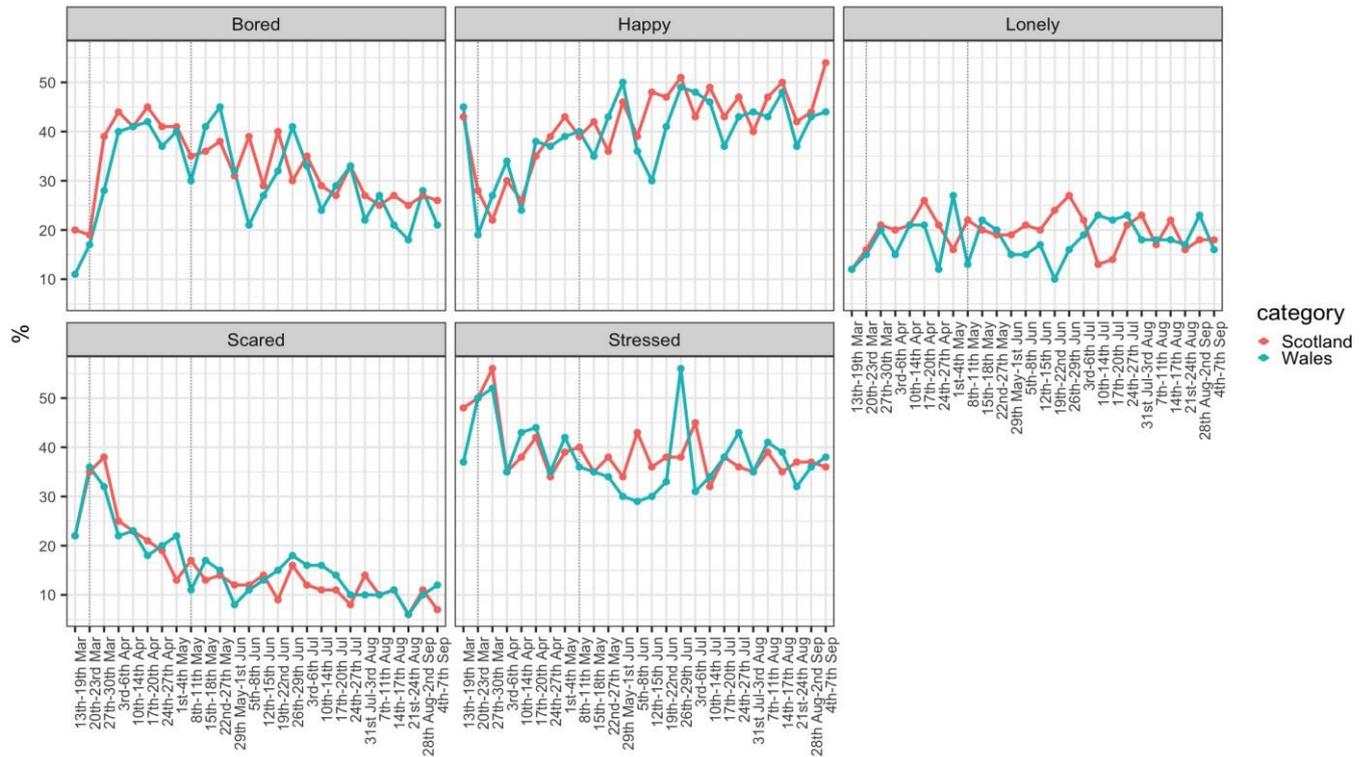
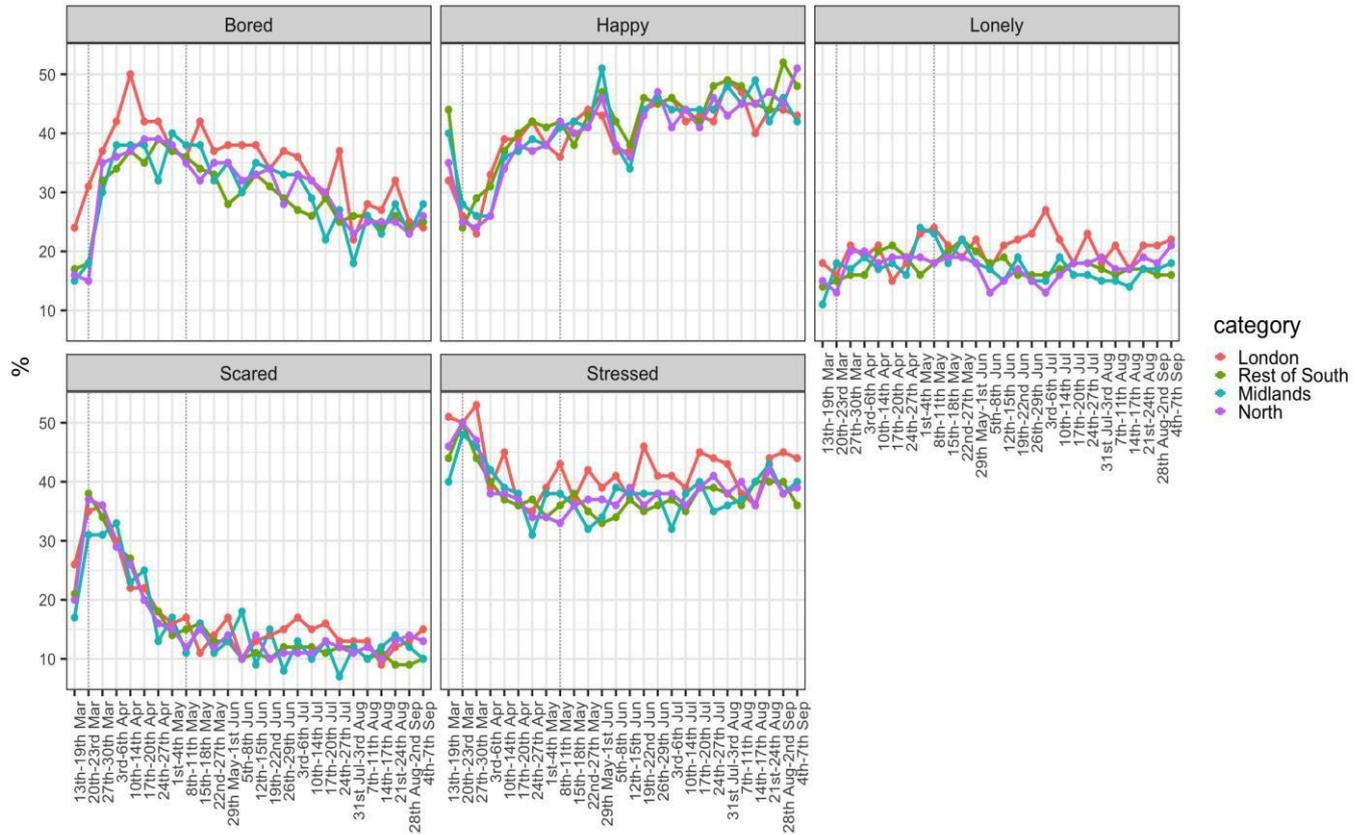
Happiness appears to continue its steady increase for most groups with notable rises (10%) for respondents in the North and in Scotland.

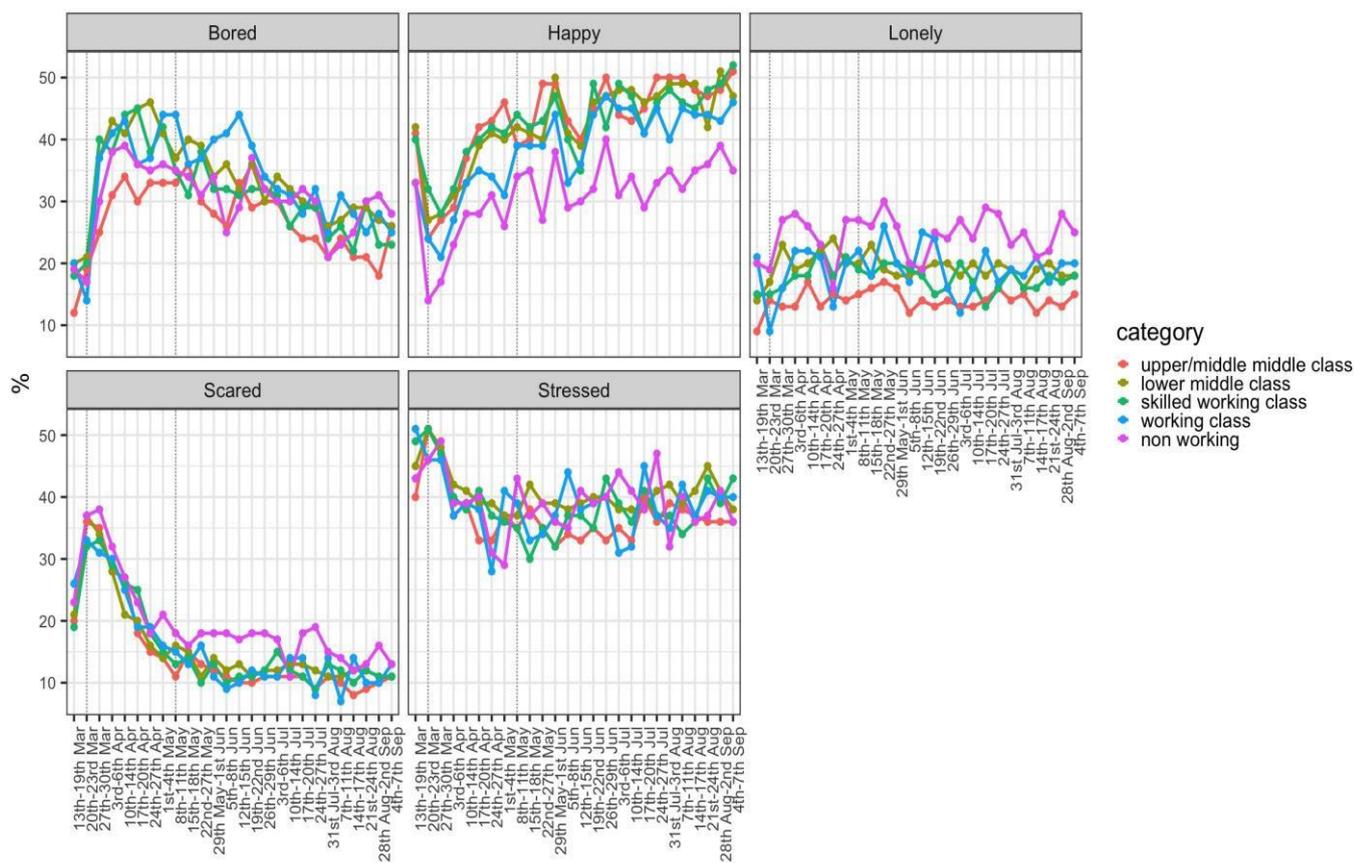
The non-working group continue to have the lowest levels with 35% of respondents reporting feeling happy.

Boredom, loneliness and feeling scared have plateaued for most groups although young adults (18-24 years) reporting a sharp drop in loneliness (-10%) from two weeks ago.

Feeling stressed has also plateaued for most groups with stress continuing to decrease with age and around 10% more females reporting feeling stressed than males.







The psychological impact of Covid-19 on Emergency Responders, Essential Workers and Frontline and how can we support them through a second wave

Who we include in this definition:

- NHS-employed frontline healthcare workers
- Frontline health or social care worker employed by a:
 - registered residential care or nursing home
 - registered homecare organisation
 - hospice
- Essential Community Workers (ECWs) include local emergency decision makers and essential services, particularly those who are public facing including emergency service staff (firefighters, police officers, emergency planners)
- Community and Voluntary Sector

This includes for example:

- Public health agencies/authorities Long term health care facilities Out-patient health care facilities In-patient health care facilities Clinical laboratories
- Pharmacies Paramedics Emergency services Police
- Firefighters
- Armed forces deployed through Covid-19 Residential care homes



- Social institutions (e.g. day care)
- Persons in government involved in emergency response, defence and security Four nation's governmental response
- Emergency response decision makers Funeral services/mortuary personnel Community and voluntary sector workers

Summary

Covid-19 has expanded the emergency responders' group to emergency and essential service staff. The psychological impact on this group through Covid -19 is significant, this should be recognised, bespoke support interventions should be developed and put in place and priority referrals should be arranged for them to access support for the next fifteen years (in service, or having left service) to mediate the impact of serving through the pandemic.

The impacts of Covid-19 suggest that:

- Impact: Chronic and episodic stressors contributing to stress such as PPE, different arrangements from family, job stress of re-deployment/job demands.

Consequence: These are likely to endure throughout the pandemic lifecycle and there could be an accumulative effect of these over time, especially if interacting with other stressors.

Recommendation: Visible leadership, Clear communications to acknowledge 'normal reaction to an abnormal situation' and that this as an 'extraordinary stressor', Clear communications regarding situation, Physical safety addressed (PPE), Psychological and dignified care to patients/deceased and their families.

- Impact: Moral Injury. "Profound effects of being required to perform already highly challenging duties in a more constrained manner which may lead to risks being more difficult to manage." Significantly associated with PTSD, depression and suicidal ideation across a range of professions.

Consequence: Predicted high number experiencing these situations. Not a mental illness. Cannot be resolved with debriefing techniques (e.g. TRIM). Cannot be screened for. Traditional psych/occupational support structures across keyworker organisations (blue lights, justice system, faith leadership) not built to respond to this. Some key workers do not have any structures beyond EAP (body handlers, LA, media, government, teachers, care home workers, food store employees, decision makers).

Recommendation: Realign local level support to accommodate and respond to this evolving impact.

Some notes on the academic literature:

- Since Covid-19 there have been an increasing number of academic and occupation specific studies of the impacts of Covid-19 on those frontline staff.
- When reviewing the available evidence, we see that within these groups there are differential levels of academic attention. The emergency services and healthcare workers receive the most attention. Given this, we know more about the possible impact on these groups and we will need to take lessons from the impact on these groups and then see if they can be applied to the other occupations and sectors.

When we look at the previous impacts on these staff, we see that those most impacted by



their work are health and policing, followed by other essential community workers. Other public facing service such as social work have also existing high levels of risk of psychological impacts, but these are mostly focussed on chronic stressors of the roles, rather than major incidents (although not exclusively).

Police

Prior to Covid-19:

Before the Covid-19 pandemic, police officers were more likely to experience mental ill health than the general population, with reports of up to 39% requiring help for their management of their mental health in the UK. Stigma around mental health and the culture of dominance, masculinity and emotional self-control means that many police officers are resistant to seeking help for mental health difficulties (Edwards & Kotera, 2020). Consequently, academic studies suggest that police officers are more likely than the general population to experience depression, experience familial strife, misuse alcohol, and attempt suicide (Stogner, Miller & McLean, 2020).

During Covid-19:

These existing difficulties may be compounded by the uncertainty and stress of the Covid -19 pandemic. First responders may react more strongly to a crisis such as Covid-19 due to their responsibility for maintaining public safety, risk of exposure through interactions with the community acting as the 'face of the government' (Stogner, Miller, & McLean, 2020), enforcing restrictions that may be uncertain or unpopular (Shirzad et al, 2020). Existing practices have had to be adapted to reduce exposure, meaning officers may experience moral injury in instances where officers avoided serving the public or making a minor arrest to limit their own exposure. Finally, a lack of PPE may contribute to anxiety and fear of infection. It is this additional burden of being the focus of enforcement that is considered to be additional on this service.

Support:

Leadership has been identified as both a potential source of stress in policing and as a potential source of support. Treatment by command staff and immediate supervisors is routinely reported as a primary source of stress, and improved treatment by supervisors during times of uncertainty can improve police officers' job satisfaction. Therefore, academic literature suggests that increasing leadership skills will reduce stress.

They also suggest that programs teaching positive coping skills should come from within force or from a peer network, rather than accessed by approaching external mental health professionals. This is because of the stigma around seeking help and hyper-masculine culture within policing that often prevents officers from seeking external help. For example, Zhu et al (2020) investigated the mental health of police officers in a Chinese city affected by Covid-19 and found that the most desired psychological assistances were relaxation and stress reduction, while the percentage willing to choose psychological counselling was low.

Healthcare Workers

The majority of the literature on the wellbeing of emergency responders during the Covid -19 pandemic focusses on healthcare workers. This literature shows very clearly that healthcare workers, particularly those working directly with Covid-19 patients, are at considerable risk of developing a range of psychological and physical health problems. Six reviews of the literature show that these workers are at high risk of stress, anxiety, depression, PTSD, insomnia, addiction and burnout (El-Hage et al, 2020; Kisely et al, 2020; Pappa et al, 2020; Preti et al, 2020; Shaukat, Ali & Razzak, 2020; Spoorthy, Pratapa & Mahant, 2020). Female workers and nurses appear to be at particular risk (Shaukat, Ali & Razzak, 2020).



Anxiety and Depression

Prevalence:

Systematic reviews (e.g. Pappa et al, 2020) found that at least one in five healthcare professionals reported symptoms of depression and anxiety, and milder mood symptoms were common. Another review by Preti et al (2020) estimated depressive symptoms to be present in 27.5%-50.7% of healthcare workers and severe anxiety symptoms to be at 45% of workers. Furthermore, a study in China (Xiao et al, 2020) found that 54.2% of respondents had symptoms of anxiety and 58% had symptoms of anxiety and depression. Furthermore, 55.1% of respondents had higher stress levels than those of healthcare workers during the SARs epidemic.

Correlates:

This often is experienced with a range of other psychological impacts. The research shows clearly that being female is associated with a higher risk of anxiety and depression (Di Tella et al, 2020; Elbay et al, 2020; Pappa et al, 2020; Xiao et al, 2020). Furthermore, greater contact with Covid-19 patients also predicts higher anxiety and depression. Di Tella et al (2020) compared healthcare workers working in Covid-19 wards to healthcare workers working in other wards and found that Covid-19 ward workers reported higher depressive scores. In the study by Xiao et al (2020), healthcare workers who had contact with diagnosed patients were approximately twice as likely to develop anxiety and depression, and Elbay et al (2020) found that depressive scores increased with the number of Covid-19 patients cared for.

Fear of infection by Covid-19 and inadequate access to PPE were also significant risk factors for anxiety and depression. Lam et al (2020) found that the strongest significant risk factors for depression, after adjustment, were healthcare workers who reported the greatest extent of feeling susceptible to contracting Covid-19 and those who reported the greatest difficulty obtaining face masks. Simms, Fear and Greenberg (2020) surveyed 3435 personnel and found that an individual's perception of having inadequate equipment is significantly associated with symptoms of common mental health disorders, probable PTSD, poorer global health and increased reporting of emotional problems.

Other factors associated with heightened anxiety and depression were being younger, single, nursing rather than medical staff, having less work experience, increased weekly working hours, lower levels of support from peers and supervisors, lower logistic support, and lower feelings of competence during Covid-19 related tasks (Elbay et al, 2020; Di Tella et al, 2020).

Post-traumatic reactions

Prevalence:

There is a consensus within all of the relevant literature that healthcare professionals are at an increased risk of traumatic stress (El-Hage et al, 2020). Preti et al (2020) reviewed the literature on the impacts of epidemics and pandemics, and found that between 11% and 73.4% of healthcare workers, including physicians, nurses and auxiliary staff, reported post-traumatic stress symptoms during outbreaks, with symptoms lasting after 1-3 years in 10%-40% of workers. Furthermore, 18.1% to 80.1% report high levels of stress related to their healthcare work.

Correlates:

Direct exposure to Covid-19 patients appears to be an important risk factor for developing traumatic reactions. Kisely et al (2020) found that staff in contact with Covid-19 patients were significantly more likely to suffer from acute and posttraumatic stress, as well as psychological distress. Di Tella et al (2020) compared healthcare workers from Covid-19 and non-Covid-19 wards and found significantly higher rates of posttraumatic stress in the Covid-19 workers. They also found that being female and being older were both associated with a higher risk of traumatic reactions. Furthermore, Vagni et al (2020) found that their defined healthcare workers (consisting



of doctors, nurses, operators and psychologists) had higher levels of stress than their defined emergency workers group (consisting of ambulance workers, firefighters, police and Civil Protection) and those involved in the treatment of Covid-19 were exposed to a large degree of stress and were at high risk of developing secondary trauma .

Burnout

Prevalence:

As physicians could be defined as one occupational group in the frontline healthcare workers responding to the Covid-19 outbreak, it is highly recommended that the wellness of this group is invested in to avoid shortage due to burnout and delivery on care of that group. Seo et al (2020) surveyed 171 healthcare workers during a MERS outbreak and found that 65.5% experienced disengagement and 79.5% suffered from exhaustion. Barello, Palamenghi and Graffigna (2020) found that professionals who are directly involved in the care of patients with Covid-19 reported significant work-related psychological pressure and frequent physically manifesting symptoms. Levels of emotional exhaustion appeared higher than normal levels and the percentage of workers with high levels of exhaustion was significantly higher than the one found in other Italian samples before the Covid-19 outbreak, or in other healthcare settings during the SARS pandemic. It is important to note that this study was conducted after the first five weeks of the Covid-19 pandemic, burnout is likely only to have increased since then, and may be even higher during a winter second wave.

Correlates:

Direct exposure to Covid-19 patients appears to be associated with higher rates of burnout. Shorter length of service is associated with significantly higher stress and more likelihood of burn out. Female trainees were significantly more likely to be stressed, and female healthcare workers were more likely to experience exhaustion. The academic papers on these issues also suggest that disengagement was associated with lower levels of purpose and hope, a higher perception of job risk, and exposure to the media , and exhaustion was associated with lower levels of purpose and hope, a higher perception of little control of the infection, a higher perception of job risk and prior experience related to infections. Nurses as opposed to doctors have also been found to experience higher subjective burden (the felt impact of providing care) during the Covid-19 pandemic (Kramer et al, 2020).

Sleep Disturbance

Prevalence:

Reviews by Shaukat et al (2020), Spoorthy et al (2020), Ferini-Strambi et al (2020) and Pappa et al (2020) all conclude that healthcare workers are suffering from higher levels of sleep disturbance and insomnia during the Covid-19 pandemic. Ferini-Strambi et al (2020) report that, even before the pandemic, healthcare workers experienced poor quality sleep that affected their health, and that this has increased during the pandemic. Pappa et al (2020) found that almost four in ten healthcare workers are experiencing sleep difficulties and/or insomnia during the pandemic. Qui et al (2020) found that Chinese frontline health workers have higher prevalence of sleep disturbances and worse sleep quality than non -frontline workers during the pandemic. Wang et al (2020) surveyed 2737 healthcare workers in a province significantly affected by Covid-19, and found that 61.6% of the respondents reported sleep problems, and the prevalence of sleep disorders was higher among the frontline healthcare workers compared to the non-frontline and non-medical staff.

Correlates:

Sleep impairments amongst healthcare staff are of concern as sleeplessness contributes to symptoms of depression and anxiety, and symptoms of depression and anxiety disturb sleep. Sleep disturbances are a stand-alone risk factor for suicidal behaviour (Bernert & Nadorff, 2015).



Poor sleep may also impair decision making (Heath, Sommerfield & von Ungern- Sternberg, 2020), and Silva et al (2020) suggests that as impaired sleep quantity and quality affects the integrity of the immune system, healthcare workers experiencing sleep difficulties may be at increased risk of infection by Covid-19 and other diseases.

Sources of support

Taking the learning from healthcare studies and applying these to frontline workers the following actions should be considered.

Role of Government:

Transparent information, clear communications, and adequate supplies and support materials are essential (Hu & Huang, 2020). Recent studies show that governmental and institutional attitudes toward the pandemic can directly increase motivation and performance levels of frontline staff, thereby protecting against negative mental health effects. Frontline staff must feel that the government and their sector leadership understand how stressful the current situation is and that they are taking actions to take care of them. This includes clear communication with the staff, provision of protective measures and PPEs, and sensitive administration of work shifts (Fukuti et al, 2020).

Role of Occupation Sector:

Leadership and work culture are important for protecting against burnout (Heath, Sommerfield & von Ungern- Sternberg, 2020). Aspects of leadership and positive work culture that are protective against the risk of burnout include good communication and supportive professional relationships. Direct management support contributes to staff feeling positive about work and the capacity to cope with work stress and is, therefore, protective against burnout. Other leadership qualities identified as preventative against burnout include provision of resources to promote resilience, self-care and staff engagement.

Role of the local employer:

Staff feedback sessions facilitate the opportunity for workers to contribute to decision-making in the workplace. Sessions have the dual purpose of aiding personal resilience through increased sense of control over one's environment while building systemic resilience through a culture of organisational justice showing commitment to engage and support staff directly (Heath, Sommerfield & von Ungern- Sternberg, 2020).

Regular clinical screening of psychological distress for workers, especially those working in hospitals providing care to patients diagnosed with Covid-19, could be used to identify those at high risk and direct to treatment services. However, this has to be done with care, integrity and with professional support to implement. To do this properly this could take upwards of three months and will cost money. If sectors are considering this, this should be done in line with the British Psychological Society guidelines.

Early psychological assessments, additional social support, and continued long-term interventions are extremely important for workers who have suffered bereavements of their colleagues and in their own families (Hu & Huang, 2020). For example, Miotto et al (2020) implemented a three tier system: tier 1 consisted of educational documents, possible screening for high level of stress, and a support phonenumber, all of which were available to all staff; tier 2 involved screening for mental health issues and individual and group support as well as triage to more intensive support as needed; tier 3 consisted of direct mental health services to individuals and their immediate family members.

Role of the individual:



Heath et al (2020) list a number of ways to decrease burnout in staff. It has been suggested (but not robustly investigated) that physical activity has shown promising effects on decreasing rates of burnout. Good sleep hygiene is an important measure in burnout prevention and promoting personal resilience. At the individual level, cultivating meaningful relationships and a solid social network is important; however, this depends on organisational factors that facilitate a work-life balance and professional connectedness. Mindfulness practice and stress management approaches are two emotional health interventions with evidence of efficacy and measurable outcomes for reducing burnout and promoting resilience.

Length of impacts

Academic literature from previous major incidents and other pandemic contexts suggests that the impacts will continue to be felt for the next decade, with peaks in support for help dealing with the impacts appearing immediately, at the 3-5 year mark after people have tried to use their existing coping strategies to process the impacts but relationships have started to suffer, on retirement or change out of the sector when rumination on the experience may increase the impact of the experience and help sought to process the impact.

Recommendations

- Some interventions may have greater lead times and require more investment, other strategies can be implemented quickly and easily such as mindfulness interventions, peer support programs and staff feedback sessions.
- Leadership from the occupation and sector is important and this is detailed in terms of culture and communication.
- Messaging of recognition and value of frontline workers from governmental leadership is valuable to motivation and clear communication supports frontline wellbeing.
- Covid-19 has expanded the emergency responders group to emergency and essential service staff.
- The psychological impact on this group through Covid -19 is significant, this should be recognised, bespoke support interventions should be developed and put in place at local level, occupation level and sector level.
- Priority referrals should be arranged for these frontline service workers to access support for the next fifteen years (in service, or having left service) to mediate the impact of serving through the pandemic.
- Long term strategies need to be developed across LRF organisation partners at local level. Identify the support structures can we aggregate across those partnerships to offer key workers support.
- Informal structures such as peer to peer support are consistently effective, can we implement accredited, evidence-based systems at local level across these groups to support their rapid implementation and establish how do these fit within the wider ecology of support already in place.
- Education to those frontline and essential workers of what it at risk and what it feels like should be promoted to workers so they can be vigilant and encourage self-monitoring.
- Advice to occupational health and psych support for these occupations on how to support those workers appropriately with the resources already available. Priority access to therapeutic offerings in the longer term should be implemented.

What we do in this analysis, how and why (caution when interpreting)

A data review is undertaken by academics at Nottingham Trent University every week to inform the C19 National Foresight Group. Data related to Covid-19 UK social and economic trends is reviewed to inform, guide and help prioritise discussions at national and local decision-making level (LRFs). The C19 National Foresight Group are keen to ensure that the data included has been ethically governed and structured to adhere to open access, data protection and GDPR regulations and principles. For example, the data is to be manipulated in an ethical manner, and the content and context is to be fit for purpose in terms of the audience and decision timeframe in question.

Activity Completed

The following findings are based on a review of multiple data sources exploring Social, Economic, Psychological, Community aspects of Covid-19 in the UK. These could include:

- ONS: covers wellbeing, perceived financial precarity, objective indicators of UK economy, household financial pressures, perceived impact on worklife
- OfCom: Public perceptions of information to help manage Covid-19, perceptions of preparedness and action
- ONS: Deaths from Covid-19
- Gov UK: Relevant contextual information
- Census and geographical data: Geographical/location specifics
- IMD: Socio economic trends associated with spread or primary/secondary impacts
- LG Inform: Population, social, demographic, lifestyle and health data
- You Gov: Public mood
- NTU's own analysis of open source data (lead by Lucy Justice and Sally Andrews)
- Other academic survey work published within the last week

Limitations for Consideration: The National Foresight Group have been keen to quality assure the data assumptions, including the equity and representation of participants.

Internet use data indicates representational issues in older adults

Almost all of the data sets draw from online surveys. With this in mind the statistics behind online access were explored. The following is to be considered in the assumptions taken from the data sets.

The table below shows the estimated number of people who have never used the internet. The data are drawn from ONS 2019 Internet users:

Table 1: estimated number of people who have never used the internet

Age	Estimated number of people who have never used internet	Age	Estimated number of people who have never used internet
16-24	20,000	55-64	389,000
25-34	28,000	65-74	869,000
35-44	46,000	75+	2,482,000
45-54	158,000	Equality Act Disabled Not	2,336,000
		Equality Act Disabled	1,657,000

Table 1 shows that caution should be applied when considering the inferences made in the rest of the document as older adults could be underrepresented in the samples. The estimated numbers of those that have never used the internet begins to increase around age group category 35-44, the subsequent age categories increase by approximately twice as many non-users as the age category that precedes it. The numbers of 'over 75s' (2,482,000) for example not using the internet equates to almost a million more than the total of the other age group categories (1,510,000).

The interpretation of data should also consider the proportion of people known to be disabled by government agencies who do and do not meet the Act's criteria. These numbers make up 3,993,000 of the population, so this should be considered in the representativeness of the data.

END.

Contact us: If you have any questions about this output please email: C19foresight@ntu.ac.uk
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