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Editorial

The mental health impact of providing spine care during COVID-19

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What is the COVID-19 pandemic?

The World Health Organization declared the COVID-19 virus outbreak a pandemic on March 12, 2020. While the infection mortality rate is not fully understood at this stage, it appears to be substantially higher than that of other recent pandemics (eg, H1N1 pandemic, mortality rate 0.02%) [1]. Emerging evidence shows that incubation period of COVID-19 is approximately 5 days, and the majority of those who develop symptoms will do so within 11 days of infection [2]. Certain groups, such as the elderly and those with some pre-existing medical conditions (eg, chronic heart or respiratory diseases), appear to be particularly vulnerable to the disease [1,3].

What impact may COVID-19 have on spine patient care?

Growing international evidence suggests that COVID-19 may place a substantial demand on already overstretched healthcare services. Across specialties, a lack of specific resources—such as limited beds in intensive care units (ICU), essential medicines and ventilators, few staff with necessary skills (eg, critical care nurses and consultants)—and increased demand on healthcare service may mean that clinical care teams may be unable to adequately treat all patients. In fact, as resources become increasingly scarce, in some cases clinicians may have to choose which patients are allocated scant resources and lives will inevitably be lost that could, in other circumstances, have been saved. These difficulties are being seen globally but particularly in those countries badly affected by the disease, including Italy [4] and China [5].

Several steps have been taken to prevent the spread of the COVID-19 virus in hospitals. Many wards have instigated policies where no visitors may accompany patients, any patients showing signs of respiratory problems are segregated into designated wards on arrival to hospital and all elective surgeries are postponed. Nonetheless, surgical emergencies, such as spinal cord injuries and progressive diseases (eg, cancer, myelopathy), will continue to arise during this challenging time.

In general, the latter groups of patients formed the simplest set of decision-making before the pandemic. Surgical procedures may be complex, but the outcomes associated with nonoperative treatment can be unpredictable, therefore surgery is usually recommended (unlike many elective surgeries). During the pandemic however, many more factors must be considered. Hospitals are a focus for infected patients, especially in intensive care facilities. Patients presenting urgently are often already in the COVID-19 high-risk groups (eg, older age, comorbidities, ventilatory compromise), and exposing them to a high COVID-19 environment throughout the assessment, treatment, and recovery pathway may place them at greater overall risk than the underlying presenting pathology. Additionally, the surgeon must take into account the risk to the broader surgical team and patients with other pathologies requiring access to increasingly scant residual healthcare resources, including importantly COVID-19 admissions.

The decision as to whether to postpone, or perform, a spine-related surgical procedure has become more complicated in light of the pandemic. Delaying surgery may cause clinical deterioration leading patients to present as

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emergencies at a time when, in the midst of the COVID-19 pandemic, they will be less easily managed [6]. The pathologic process may move beyond surgical intervention by the time the pandemic moves into a more controlled phase. Once the decision is taken to operate, there is concern and yet little evidence whether aspects of a surgical procedures (eg, creating bone/blood aerosols) may make the surgical teams more vulnerable to the virus. It remains unclear whether individual elements of an operation should be omitted to reduce the overall risk to patient (eg, need for ICU) and surgical team, while perhaps reducing the effectiveness of the surgery itself.

What mental health implications may there be for healthcare providers in spine care during COVID-19

Caring for patients with spine difficulties is not without its complications at the best of times. The COVID-19 pandemic adds a further layer of complexity, with spine clinical care teams now required to make extremely difficult decisions with very limited data and high levels of uncertainty. Working in such conditions has the potential to adversely affect the mental health of clinical care teams.

In particular, healthcare providers may be particularly vulnerable to experiencing moral injuries during this time. Moral injury is defined as the profound psychological distress which results from actions, or the lack of them, which violate one's moral or ethical code [7]. Morally injurious events can include acts of perpetration, acts of omission, or experiences of betrayal from leaders or trusted others. Unlike post-traumatic stress disorder, moral injury is not a mental health disorder. However, experiences of potentially morally injurious events can contribute to the development of several mental health problems, including depression, post-traumatic stress disorder, suicidal ideation, and anxiety [8].

In the context of the COVID-19 pandemic, a lack of resources in healthcare systems, such as limited access to rapid triage facilities and theatres, may mean spine clinical care teams are unable to adequately care for those they are responsible for which may result in great patient suffering (eg, paralysis, permanent neurologic deficit, and overall inadequate outcome) or a loss of life. A lack of clear guidance or training, as well as personal protective equipment, may also mean clinical teams perceive that their own health is not being properly considered by their employers and they may feel at increased risk of disease exposure. A hospital "no visitors' policy" may mean that clinicians are delivering devastating news to patient next of kin in hospital car parks or remotely such as by telephone. As with many across society, surgical care teams may have additional stress due to concerns over financial security.

Finally, current WHO guidance recommends that those showing signs of a potential COVID-19 infection (eg, new persistent cough, fever) or live in a household where someone shows such symptoms, must self-quarantine at home for up to 2 weeks [1], meaning that some clinicians will be unable to join their colleagues who are working incredibly hard. A recent review on the impact of quarantine on mental health found that healthcare professionals were at increased risk of suffering mental health difficulties [9]. It therefore is highly likely that many clinicians will experience a degree of moral distress and some moral injuries [10].

What impact may COVID-19 have on spine patient psychological well-being

Spinal surgery has always been an area of anxiety and concern for patients mainly due to the potential risks of life-changing neurologic injury. In the main, clinicians are able to mitigate against risk and where necessary, secondary therapeutic intervention can reduce permanent disability and threat to life. The emergence of COVID-19 has redefined assumptions regarding spinal surgical risk-benefit ratios. Clinical care teams are now faced with the added burden of a highly contagious life-threatening condition totally unrelated to the surgical procedure that, as such, they cannot treat. Informed consent will need to include risk of COVID-19 transmission and yet clinicians cannot currently quantify that risk.

Indeed, from the point of presentation in the community through to hospital admission patients are faced with the stark prospect of contracting COVID-19 from other members of the public, healthcare workers and medical infrastructure (eg, MRI scanner). With the prospect of hospital admission, they face isolation from friends and family at a time of need. The usually protective mechanisms of consent, shared decision-making and "family and friends" involvement that have evolved dramatically over recent years is likely to become diluted during this period. Changes in practice including surgical thresholds and the reasoning behind those changes will need to be relayed to the patient, potentially heightening patient anxiety about quality of care and the potential for harm. These factors may have significant and deleterious effects on the mental health of not just those individuals at risk of psychological illness, but also healthy individuals with no previous history of mental illness.

None of this bodes well for the psychological well-being of patients and increases the risk of psychological difficulties and potential moral injury in surgeons.

Recommendations for spine clinicians to preserve patient well-being

To reduce spread of the virus, as well as the secondary psychological ill-health fears about contraction might cause, requires clear and simple local guidelines that are consistent with published national and international best-practice guidelines. Steps to mitigate against spread of the disease and ensure the safety of clinicians and patients are:

- Staying safe—All staff should practice social distancing measures at work and at home. Appropriate self-isolation, quarantine, and access to testing are vital for

symptomatic or exposed staff. There should be a focus on minimizing hospital attendance by both staff and patients. Contact between in-coming and out-going healthcare teams should be avoided as is cross site contact, virtual handover should be the new norm.

- Protect the Health System—Streamlined working is recommended by early cessation of elective operating, highly restricted outpatient encounters and a move to a virtual workspace. Low acuity patients should be discharged as early as possible or moved to sites where the risk is deemed less. Virtual outpatient clinics, using secure platforms, should be run which respect patient confidentiality, with measures in place to ensure adequate monitoring to identify at risk patients. However, clinicians must have capacity to convert to a rapid face-to-face consultation if clinical concern is raised. Patients and healthcare professionals will need to be made aware of the limitations of this process and be conscious of the rapid evolution that will occur in a system under stress and in a constant state of accelerated learning.
- Save lives—"Appropriate Personal Protection Equipment (PPE) to protect patients and surgeons should be worn at all times" [3,6] a simple statement and yet is often a great source of anxiety. Subjective tiers of engagement depending upon estimations of aerosol generation and the COVID-19 status of the patient create uncertainty. Social media, fears over rationing of PPE, fear of the unknown can all engender a degree of panic, even among experienced and highly qualified healthcare staff. Clarity, transparency, simplicity, and training are key. Healthcare workers who feel correctly (or otherwise) that they have been placed in harm's way without adequate protection will inevitably feel affected by that process whether they contract the virus or not.
- Collaborative decision-making—Close interdisciplinary working is vital so that spinal patients receive the optimum care in these exceptional circumstances, this in turn will protect surgeons from decisions that might otherwise be considered harmful. Sharing resources between Neurosurgery and Orthopaedic spine is vital. Videoconferencing daily between teams alongside "groupchats" may reinforce this structure as well as identifying capacity across a broader Network. Interdisciplinary working must also involve members of the administration team and other allied health professionals to not only ensure delivery of patient care but also to protect all vulnerable members of the team. Rapid response triage systems should be in place, with all decision-making taken at senior level within the multidisciplinary team. Where feasible, teams need to remain mindful of shared decision-making goals including, where possible, with the patient and their families in addition to healthcare colleagues. Documenting this process and its communication to patients is important for audit purposes, the well-being of staff and may help allay fears of patients and their families.
- Involving the patient—Patient and family expectations will need to be managed judiciously with a realistic outlook on treatment objectives and outcomes. Advance care plans should be put into place and shared with all carers across specialties. End of life discussions must be sensitive and responsive to the patient's/family needs. The basis for these discussions must be set within the multidisciplinary team framework. Additional training on end of life discussions around COVID 19 may be required.

What steps can spine clinicians take to safeguard their own psychological well-being and that of their teams?

While not all spine clinical care teams will be psychologically affected by their role as a COVID-19 frontline keyworker, it is possible that some will. The following recommendations may be beneficial.

- Good documentation of the clinical decision making surrounding the decision to postpone or proceed with spine-related surgeries is recommended. Such decisions should be made following consultation with other team members, particularly for less experienced clinicians, as well as with the patient. This may help to mitigate any adverse psychological effects for staff should negative patient outcomes arise. Documentation can be made using databases or spreadsheets and include tools to assess health-related quality of life such as the Euroqol (EQ-5D) to help monitor progression or nonprogression of the patient's condition.
- Spine clinical care teams should be prepared for the tasks they will be asked to carry out, the impact COVID-19 may have on standard operating procedures, as well as the thoughts, behaviors, and feelings that they may experience as a result. Frank and open discussions as a team, led by senior clinicians or management, may help encourage psychological preparedness among staff.
- Spine clinical care teams should be encouraged to seek social support from colleagues or alternatively access informal support from other organizational avenues, such as trained peer supporters (such as trauma risk management (TRiM) practitioners) [11], managers or chaplaincy services. Support from those who have similarly experienced potentially morally injurious events can be particularly helpful. There is good evidence that social support following challenging experiences is protective for mental health. It is worth healthcare staff being aware of the national offer of support which, in the United Kingdom, includes a dedicated helpline and text chat facility (https://www.england.nhs.uk/2020/04/nhs-launches-mental-health-hotline-for-staff-tackling-covid-19/) and other support offerings such as the practitioner health program (https://www.practitionerhealth.nhs.uk/about-practitioner-health).
- Encouraging healthcare professionals to work in small teams at this time may also promote a sense of unified

purpose and may mean at-risk members are identified earlier. Facilitating the informal support network through shared goals, education, planning, and decision-making is a key role for management. Managers should take steps to demonstrate that all team members are valued.

- There is currently no manualized approach to treating moral injury-related mental health difficulties. Nonetheless, more experienced trauma therapists are likely to be able to adapt standard treatments for patient's particular needs. Where professional support is needed, staff should be encouraged to seek help, with relevant signposting materials made readily available.
- Those in leadership roles, including senior clinicians and management, should be encouraged to "check in" with their surgical teams, offering empathetic support and signposting where required. Ensuring staff feel that their manager and colleagues care about them is likely to be protective for well-being. Leaders who are not comfortable having psychologically informed conversations with their colleagues should ensure this is done regularly by another person (eg, trained peer supporter).
- Those in a position of leadership should appropriately take responsibility for decisions and outcomes. These leaders will also need to be supported and organizations should recognize such leaders may be reluctant to seek help themselves.

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