

## **The Effects of COVID-19 on Self-Harm in a High-Secure Psychiatry Hospital**

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## **Abstract**

### *Purpose*

Self-harm, including death from suicide, remains a significant public health challenge. The prison population is known to be a high-risk group for self-harm and suicide. This study explores the trends in the frequency of self-harm over the course of the COVID-19 pandemic within a high-secure hospital. We hypothesised that the pandemic could adversely affect the mental health of patients, which could increase the rates of self-harm. Reasons for changes in the frequency of self-harm and the strategies employed in response to the pandemic were also investigated.

### *Approach*

This paper encompasses findings from a quality improvement project that investigated self-harming behaviours from February 2020 to February 2021 in a high-secure psychiatric hospital. Incidents of self-harm were recorded based on the hospital's ward structure. Data was collected on the incidence of self-harm rates over the COVID-19 pandemic, with a focus on how the pandemic may have had an effect on self-harm.

### *Findings*

This paper found an increase in the incidents of self-harm during the initial stages of the pandemic. The first national lockdown period yielded a rise in self-harm

incidents from pre-COVID levels. The frequency of self-harm reduced following the first lockdown and returned to pre-COVID levels. We explored the psychological effects of COVID, isolation, interpersonal dynamics, and changes in the delivery of care as reasons for these trends.

### *Practical Implications*

This study demonstrates the substantial challenges of the COVID-19 pandemic to secure psychiatric services. Having an awareness of how the pandemic can impact on self-harm is important as it allows the correct balance of restriction of our patients' liberty to a degree deemed necessary to control the pandemic, and the delivery of effective patient care. The key clinical implications include the importance of direct face-to-face patient contact, effective communication, therapeutic interventions and activities, the psychological impact of quarantine, and the influence the pandemic can have on an individual's function of self-harm.

### *Value*

This paper is the first, to the authors knowledge, to explore the impact of COVID-19 in a high-security psychiatric hospital. We also explore possible explanations for the changes in the trends of self-harm and include the consideration of strategies for improving the prevention and management of self-harm in high-secure settings during a pandemic.

### **Introduction**

Self-harm, including death from suicide, remains a significant challenge for the whole of society and are major public health issues. Prisoners are a high-risk population for self-harm and suicide. The frequency and severity of self-harm within the United Kingdom criminal justice system has been increasing over recent years. (MoJ, 2019). High-security psychiatric hospitals in the United Kingdom treat patients with mental health disorders who pose a serious and grave danger to the general public. The rates of life-threatening self-harm and suicidal behaviours have been found to be relatively higher within secure institutions (Sarkar, 2011, Brooker *et al.*, 2010). These patients tend to use high-risk methods of self-harm, refuse help, and often engage in self-injurious behaviour secretly (Sarkar and Beeley, 2011, Uppal and McMurrin, 2009). These incidents of self-harm have a major impact on patient progression, staff morale and capacity to care, and also have been shown to lead to an increased risk of assaults on staff (Howard League of Penal Reforms, 2003, Uppal and McMurrin, 2009).

Empirical evidence for the theoretical underpinnings of self-harming behaviours has grown considerably, with theories including cognitive, affect regulation, interpersonal, psychodynamic, and biological (Jacobson and Batejan, 2014). The theories most widely adopted for reasons for self-harm are exerting interpersonal influence and dealing with distress (Edmondson *et al.*, 2016, Jacobson and Batejan, 2014). This is further supported by studies with strong evidence for self-punishment, anti-dissociation, and anti-suicide (Klonsky, 2007). Many of the functions of, and risk factors for self-harm within the prison population are similar to those found in the general population (Favril *et al.*, 2020). Certain environmental factors specific to prison and to secure hospitals, such as victimisation during imprisonment, solitary

confinement, and disciplinary infractions have been shown to be clearly associated with self-harm (Favril et al., 2020, Fazel et al., 2008). It is thought that the prison population import a vulnerability for self-harm through their history of trauma, violence, and mental illness, which then interact with custody-specific triggers such as longer sentences, isolation, and victimisation (Favril et al., 2020). COVID-19 presents significant challenges to prisons and secure hospitals. The mental health impact of the pandemic is substantial, and it is possible that it may affect the incidence of self-harm within secure hospitals.

#### *Self-harm within Ashworth High-Secure Hospital during COVID-19*

Within England there are three national high-secure psychiatric hospitals, Ashworth, Broadmoor, and Rampton. Ashworth Hospital's ward structure is based on the patient's primary diagnosis (personality disorder vs mental illness) and the level of dependency (high vs medium) required. The term dependency encapsulates the patient's individual care and security. The patient's care involves multiple members of staff from a variety of disciplines including forensic psychiatrists, general practitioners, junior doctors, psychiatric and medical nursing staff, clinical support workers, psychological therapists, occupational therapists, security personnel, and positive intervention programme and response (PIPS) team staff.

We hypothesised that the COVID-19 pandemic could adversely impact the mental health of patients admitted to Ashworth Hospital, which could increase the rates of self-harm. Theories postulated for an increase in self-harm were the rapid changes

in the delivery of care during lockdown restrictions, the negative psychological effects of self or enforced isolation due to quarantine, and the reduction in available services within the hospital due to lockdown.

Research on reasons for self-harm commonly cite affect regulation as the most common, with negative emotions, such as anger, depression, and loneliness often preceding self-injurious behaviours (Nock and Prinstein, 2004). Interpersonal functional processes include self-harm to avoid certain interpersonal demands, or self-harm which serves to increase support (Cipriano et al., 2017). A large proportion of the population within criminal justice services have a diagnosis of personality disorder. The motivations and functions of self-harming behaviours for those patients with personality disorder are complex and diverse and occur for a range of reasons over time (Gallagher and Sheldon, 2010). The authors hypothesise that the pandemic could negatively influence a patient's functions of self-harm, thus increasing rates of self-harming behaviours. Additionally, the pandemic enforced a reduction in the 'treatment-as-usual' (pre-pandemic) access to care, which may provide effective strategies to reduce an individual's risk to self, as well as accentuating the effect of environmental risk factors for self-harm in secure settings, such as solitary confinement in the form of quarantine.

Interestingly, in an editorial looking at the effect of COVID-19 on self-harm in UK prisons, the researchers found a decrease in self-harm in prison during the initial stages of the course of the COVID-19 pandemic (Hewson *et al.*, 2020). The reasons for this were thought to possibly be associated with reductions in peer contact,

decreased illicit substance availability, changes in staff awareness and approaches to self-harm, and improved access to certain rewards (Hewson *et al.*, 2020). This study will explore possible reasons for changes in the trends of self-harm behaviours within Ashworth Hospital, with a focus on how the pandemic may have influenced (i) an individual's functions of self-harm (interpersonal dynamics, affect regulation, anti-dissociation), (ii) environmental risk factors (quarantine, solitary confinement), and (iii) changes in the delivery of medical and nursing care (reduced face-to-face contact).

## **Methodology**

A quality improvement project was carried out by the authors within Ashworth Hospital, UK. The project was a 12-month retrospective study analysing incidents of self-harm. The 12-month period ranged from February 2020 to February 2021. Data was gathered from PACIS software using a clinician-researcher who independently gathered data on the frequency of incidents of self-harm.

A total of 8 wards at Ashworth Hospital were investigated for incidents of self-harm. All of the patients within Ashworth Hospital were male. The wards included in the project were:

- Two high dependency personality disorder wards ( $n = 25$ )
- Two medium dependency personality disorder wards ( $n=27$ )
- Two high dependency mental illness wards ( $n=29$ )
- Two medium dependency mental illness wards ( $n=37$ )

The quality improvement project included monthly intervals that incorporated varying degrees of government-imposed restrictions due to the COVID pandemic. February 2020 and the majority of March 2020 included treatment as usual (TAU). The data collection period of March 2020 to February 2021 included coronavirus restrictions (Kirk-Wade et al., 2021). The first national UK lockdown was introduced on 23 March 2020 and was in place until 10 May 2020. A second national lockdown was imposed on 31 October 2020 and ended on 02 December 2020. A third national lockdown was introduced on 06 January 2021 and continued through the remainder of the data collection period (post February 2021). A degree of government imposed COVID restrictions (social distancing, mask wearing, limits of number of people in social spaces/activities) was present from April 2020 to January 2021.

The quality improvement project also focussed on exploring reasons behind any observed trends in self-harming incidents and evaluated strategies that were implemented to improve the prevention and management of self-harm over the COVID-19 pandemic.

## **Results**

This internal report demonstrated an increase in the incidents of self-harm during the initial stages of the pandemic. Over the course of the pandemic, the increase in the incidents of self-harm returned similar trends of incidents seen before the pandemic



and in previous years. Figure 1 shows the total incidents of self-harm for the 8 wards in Ashworth Hospital included in the quality improvement project. The higher number of incidents was seen in the initial lockdown stages of the pandemic, in the months of April, May, and June 2020. This was found to be higher than the frequency in previous years, and in months prior to the first lockdown of the pandemic (23 March 2020).

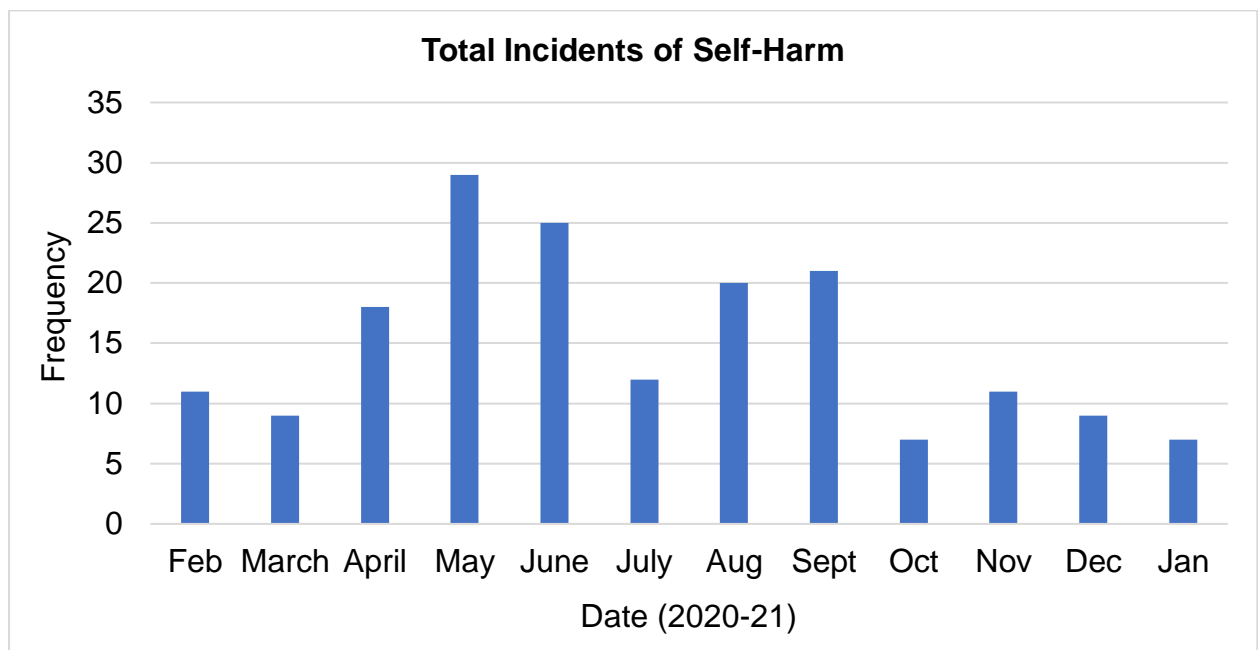


Figure 1. Total incidents of self-harm in Ashworth Hospital (February 2020 – February 2021)

The majority of the incidents of self-harm occurred within the high dependency wards, particularly the high dependency personality disorder (PD) wards (Figure 2). A slight increase above pre-COVID levels was found in August and September 2020, however on detailed analysis of this data, the incidents of self-harm predominantly involved one individual on one ward who recurrently engaged in self-harm behaviours over a short period. In April, May, and June 2020, the self-harm incidents

were similar across the two high dependency PD wards and involved multiple patients.

The second national lockdown officially ended on 10 May 2020. However, a gradual easing of restrictions occurred throughout May, June and July (Kirk-Wade et al., 2021). The easing of restrictions nationally also corresponded with the introduction of new strategies and protocols within Ashworth to ensure effective and safe delivery of care. The easing of restrictions appears to be correlated with a reduction in the incidents of self-harm. This reduction is greater emphasised within the high dependency PD wards. The reduced frequency continued throughout repeated national lockdowns that were implemented and self-harm incidents remained at pre-COVID levels.

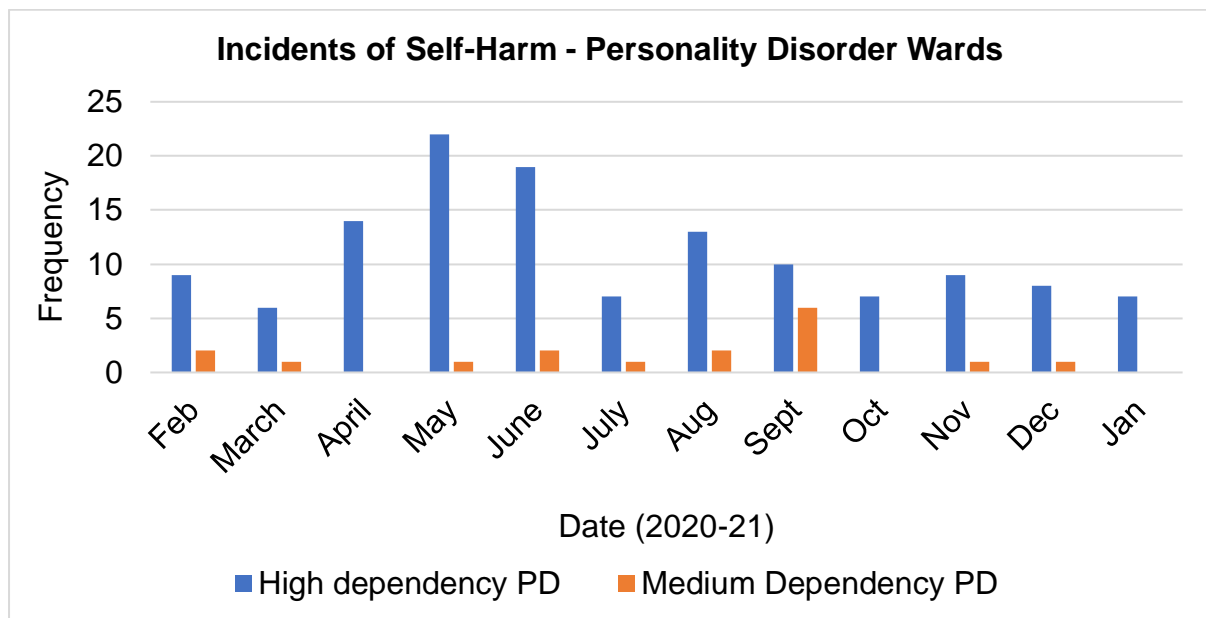


Figure 2. Incidents of self-harm in high and medium dependency personality disorder wards in Ashworth Hospital (February 2020 – February 2021)

A clear pattern of increased self-harm was not seen within the medium dependency PD wards and both the high dependency and medium dependency mental illness (MI) wards (Figure 3). The frequency of self-harm seen within the MI wards were low pre-COVID and throughout the data collection period. On the high dependency MI wards there was a slight increase in the frequency over April to September 2020. This is a low frequency event on the MI wards, and as such, it is difficult to infer clear patterns from this data. However, it does appear that there was a small rise in self-harm incidents over the initial stages of the pandemic, during the first lockdown and following the easing of restrictions. The increased rates are not seen over the second and third lockdown.

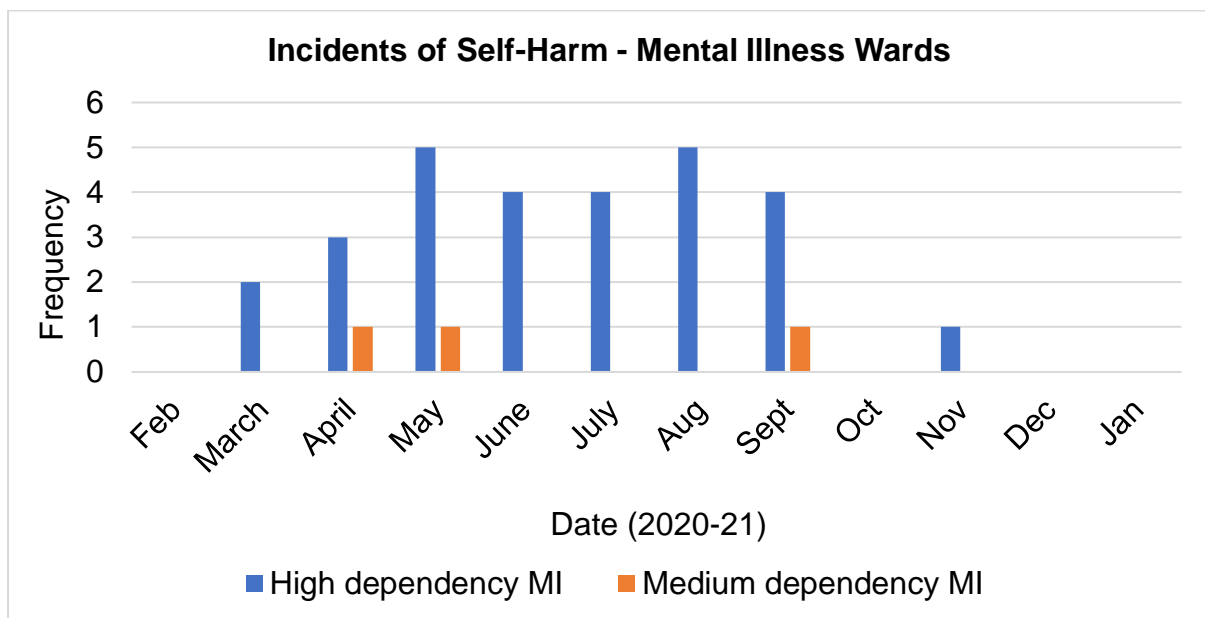


Figure 3. Incidents of self-harm in high and medium dependency mental illness wards in Ashworth Hospital (February 2020 – February 2021)

## Discussion

The increased rates of self-harm within the initial stages of the coronavirus pandemic are the same as our hypotheses. It is thought that this was likely due to the rapid changes to the delivery of patient care, the negative effects of isolation, and the psychological impact that dealing with a pandemic can entail. These increased rates of self-harm have not been seen in subsequent lockdowns over the course of the pandemic. Why might this be, and what strategies can we consider at current and in the future to manage self-harm risk in secure hospitals?

With the introduction of the initial lockdown restrictions at the end of March 2020 there was a change in the delivery of care within Ashworth Hospital. Face-to-face contact with patients from the multi-disciplinary team (MDT) was minimised, with less doctor-patient contact, postponement of group and individual psychological therapies, reduced occupational therapy input, reduced on and off ward activities with the PIPS team, and cancellation of 'Life Rooms' (a centre for rehabilitative activities). This adjustment aimed to reduce footfall on the wards, and thus the potential transmission of the virus, and the safety of patients and staff.

The restructure in the delivery of care may be a possible explanation for the increase in incidents of self-harm at Ashworth Hospital during the initial pandemic lockdown. With fewer members of the MDT team involved in direct patient contact, the therapeutic milieu available for patients was reduced. Psychosocial interventions delivered by different members of the MDT, such as problem-solving activities,

occupational skill building, and cognitive therapies have been shown to be effective in reducing self-harm and suicidality (Comtois and Linehan, 2006, Motto and Bostrom, 2001). Additionally, therapeutic alliance, defined as patient's confidence in staff and quality and strength of their relationship, is likely to be impacted with a change in the frequency and method of direct patient contact by certain individuals in the care team (Dunster-Page *et al.*, 2017). A patient's individual therapeutic relationship with certain care team professionals may offer them a previously unknown experience of a secure base; a person who is responsive and sensitive, offering the patient a safe haven, which may consequently reduce self-harming behaviours (Dunster-Page *et al.*, 2017, Bowlby, 1988). These challenges would be highlighted further on the high-dependency PD wards within Ashworth Hospital, where the higher frequency of self-harm was seen over these stages of the pandemic.

The patients on the high-dependency PD wards have a higher baseline rate of self-harm, with a greater degree of disability related to their PD diagnoses than those on the medium-dependency wards. A systematic review on risk factors and correlates of deliberate self-harming behaviour demonstrated a large number of studies that found an association with stressful traumatic experiences in childhood, specifically emotional neglect, psychological or physical abuse, and sexual abuse (Fliege *et al.*, 2009). Those patients on the high-dependency PD wards are considerably more likely to have experienced traumatic experiences in childhood. Research emphasises the importance of interpersonal features and affect regulation as a function of self-harming behaviours. These are highlighted further in patients with a severe personality disorder, where interpersonal dysfunction and affect dysregulation

are prominent features. Effective strategies often employed within secure settings include communication that focusses on strengthening interpersonal bonds and encouraging the discussion of emotions (Gallagher and Sheldon, 2010, Muehlenkamp et al., 2013). With reduced face-to-face contact, the opportunities to deliver strategies that aim to mitigate an individual's risks to themselves were limited. This demonstrates the impact that relational interventions can have within secure units, which was significantly impacted by the initial pandemic lockdown, and likely effected the rise in self-harm observed.

The restructure in the delivery of care also resulted in changes to patients rewards for good behaviour, stability, and progress. Examples of these include engagement in on-and-off ward activities, visitation, and garden/grounds access. Visitation was suspended early on in the COVID-19 pandemic, whereby family and befrienders face-to-face contact was limited. The hospital shifted to a virtual mode of visitation, meaning that patients could maintain contact with others outside of hospital. What is noteworthy is that this new mode of visitation delivery permitted visitation from family and friends whom many patients had limited face-to-face contact with prior to the pandemic. This can be a source of comfort, but also could be distressing for certain individuals. The potentiality toward self-injurious behaviour initiation has been shown to increase with interpersonal risks, such as negative relationships with family, loneliness, and low social support (Wang et al., 2020). These factors may have been adversely impacted by the initial cessation of visitation due to the first lockdown, and also by the transition in the mode of delivery of visitation for patients.

The restructure in the delivery of care also introduced delays to the progress of patients. Restrictions within hospital and within the whole healthcare sector led to challenges and delays in the transfer of patients between the wards within the hospital, the discharge of patients to other hospitals, and the delivery of multi-disciplinary care programme approach meetings aimed at supporting progress and recovery. Removing incentives and introducing delays to progress may leave patients disillusioned and disempowered from their care pathway, which may lead to frustration, anger, and hopelessness. Individuals with PD can discount future incentives or rewards and engage in self-harm in an effort at self-regulation (Hurst and Kavanagh, 2017). The pandemic resulted in initial delays in progress and the removal of incentives for patients as reducing COVID transmission and patient safety became prioritised. Hence, these stressors may be more challenging in those with severe PD, where self-harm can be seen as a function of emotional regulation, reducing negative emotions such as fear, sadness, and anger (Andover and Morris, 2014).

With less time spent engaging in meaningful and purposeful activities more unstructured social time is spent with peers, which may increase the likelihood of interpersonal difficulties and conflict. The central role of interpersonal difficulties for personality disordered individuals is well-known (Wilson *et al.*, 2017), and this impairment may become heightened when patients are faced with the changes to their daily routine. Additionally, a reduction in grounds access and off-ward activities may limit interactions with patients from other wards, some of whom may have been a positive and protective relationship for that individual. Research has explored the main functions of deliberate self-harm in prison populations and secure hospitals,

which includes emotional stressors, affect regulation, self-punishment, interpersonal influence and boundaries, and anger expression (Klonsky, 2007, Snow, 2002).

These functions for self-harm may all be heightened by the pandemic and resultant restrictions that were enforced within high-secure hospitals. The pandemic resulted in a reduction in meaningful activities, and an increase in unstructured social time.

This decreased time spent strengthening interpersonal bonds and limited opportunities for effective communication with patients, known to be effective strategies in reducing self-injurious behaviours (Gallagher and Sheldon, 2010). A change to a patient's routine and structure can also introduce uncertainty and unpredictability into their environment. This can further heighten an individual's functions of self-harm.

Hewson *et al.* (2020) postulated that the decrease in self-harm found in prisons during the COVID pandemic was associated with reduced exposure to interpersonal dynamics with peers. With fewer patient numbers and greater relational security, interpersonal factors are often easier to control within a high-secure hospital than in a prison environment. Thus, we hypothesise that the possible impact of quarantine, isolation, changes in the delivery of services, and the reduction in therapeutic activities would likely have had a greater effect than the possible increased exposure to negative or intimidatory interpersonal dynamics.

The requirement for self or enforced isolation in the form of quarantine is a key strategy in reducing transmission of the virus. Within prison and secure hospitals, this involves a significant period of isolation within the patient's own cell or room. A



systematic review identified social isolation, previous self-harm attempts, and having a psychiatric diagnosis as important risk factors associated with self-inflicted deaths within secure services (Fazel *et al.*, 2008). Prolonged quarantine has also been shown to be associated with a high prevalence of self-reported symptoms of psychological distress (Brooks *et al.*, 2020). Perhaps unsurprisingly, the longer the quarantine experienced, the poorer the psychological outcomes were. This may have had an effect in the initial pandemic lockdown, where testing was less efficient, personal protective equipment (PPE) was scarcer, and guidance on the duration of quarantine was less clear. An extension of quarantine, no matter how small, is likely to exacerbate any sense of demoralisation or frustration, factors that are known to increase the risk of deliberate self-injury (Klonsky, 2007, Rona *et al.*, 2007, Snow, 2002). Muehlenkamp *et al.* (2013) cite depression, loneliness, and regulation of emotions as key functions of self-harming behaviours. The psychological impact of quarantine is likely to further heighten these functions, therefore increasing the risk of self-injurious behaviours.

### *Strategies employed in response to the pandemic*

The pattern of increased incidents of self-harm was not seen further over the course of the pandemic, and not repeated in the second or third lockdown restrictions.

Changes to the delivery of care from the COVID informed protocols were predominantly introduced in June and July 2020. Further strategies continued to be introduced throughout August and September 2020, and a balance sought between delivering effective care and ensuring safety from COVID-19 during the second and

third COVID lockdowns. The implementation of changes from June 2020 appears to correlate with a reduction in the frequency of self-harm observed in our study. The changes employed aimed to deliver effective care that was as close as possible to TAU within high-secure units, whilst also reducing disease transmission, adhering to COVID guidance, and ensuring patient and staff safety.

As a greater understanding of the pandemic emerged, insightful and considered transformations in the delivery of care allowed an effective balance of therapeutic care and safety. Face-to-face patient contact remained integral to the care process with the implementation of PPE and rapid flow testing (Scientific Advisory Group for Emergencies, 2020) ensuring a safe delivery of care. This ensured regular contact and communication with patients from the MDT, which was limited during the initial stages of the pandemic. The wards also benefitted from ongoing support offered by PIPS team and non-nursing professionals to ensure effective ward staffing and timely delivery of therapeutic interventions.

The introduction of virtual technology for staff and patients allowed the delivery of patient visitation, and professional multi-disciplinary care meetings. This provided patients with a means of maintaining supportive relationships with friends and family outside of the hospital, The virtual delivery of MDT meetings prevented any delays to the progress of patients. Additionally, it provided a cohesive, informative line of communication to the patient regarding their ongoing care and management.

Although access to certain on and off-ward therapy and PIPS supported activities were suspended temporarily at different periods over the pandemic, the care team

were able to design and implement alternative therapeutic activities that were deemed safe during the subsequent lockdowns, such as garden access and outdoor exercise. Additionally, MDT staff that deliver the therapeutic activities also attended wards allowing continued interpersonal contact and communication with patients.

Despite the challenges faced over the course of the pandemic, a considerate, responsive, resourceful, and inventive approach to delivering effective and safe care in Ashworth Hospital was successful in reducing the rise in self-harming behaviours seen during the initial stages of the COVID-19 pandemic. This project investigated reasons for the increase in self-harm alongside evaluating strategies that were employed to deliver effective care during the pandemic. This detailed exploration helps to inform clinical practice, providing evidence for the development of clear learning points for delivering care to high secure patients in high impact low frequency events. Key clinical implications for ongoing and future care demonstrated include, (i) the importance of continued MDT staff face-to-face contact with patients, alongside effective communication that encourages discussion of emotions and strengthens interpersonal bonds, and provides prisoners with informative and accurate information on the pandemic, (ii) ensuring the continued delivery of therapeutic activities and interventions, including adapted activities that are safer during a pandemic, (iii) having an awareness of the psychological impact of quarantine for our patient group, with the aim to provide the patient with effective, informative communication, and to reduce the length of quarantine where feasible, (iv) being mindful of the impact that the pandemic may have on delays to patients care pathways, and introduce strategies to minimise these delays where possible e.g. via virtual care programme approach meetings, (v) continuing to assess the

individual's functions of self-harm and the contextual information surrounding them. The offender population motivations and functions of self-harm are diverse and complex, thus gathering evidence on how the pandemic may be impacting on the patient's motives and functions of their self-harming behaviours would provide valuable insights into developing strategies that reduce the level and extent of risk.

## **Conclusion**

This paper is the first, to the authors knowledge, to explore the impact of COVID-19 in a high-security psychiatric hospital. This paper highlights the need for finding the right balance between the restriction of our patients' liberty to a degree deemed necessary to control the pandemic, and the delivery of effective patient care. It is vital to understand historic and current characteristics of self-harming behaviour and the social context they evolve in within secure settings, so that specific drivers of risk can be identified, and policies and procedures for managing risk informed. Those involved in the delivery of care within high-secure hospitals must remain vigilant to any factors that may increase patient's propensity to engage in self-injurious behaviours, ensuring that patients' mental health care is protected, the negative psychological impact of quarantine is minimised, and patient's safety from the pandemic is preserved.

## **Implications for Practice**

- COVID-19 presents unique and significant challenges to the forensic patient population.

- Management should ensure the correct balance of measures that reduce the transmission of disease, and effective delivery of care that minimises the impact that these restrictions may have on the patient's mental health.
- Having an awareness of how the pandemic can impact the frequency of self-harm incidents and its relationship with an individual's risk and functions of self-harm is important.
- Further research could focus on the forensic patients' subjective motivations and/or functions of self-harm during COVID-19.

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