

Self-harm and the COVID-19 pandemic: a study of factors contributing to self-harm during lockdown restrictions

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ABSTRACT

Introduction

The COVID-19 pandemic and resulting public health measures may have major impacts on mental health, including on self-harm. We have investigated what factors related to the pandemic influenced hospital presentations following self-harm during lockdown in England.

Method

Mental health clinicians assessing individuals aged 18 years and over presenting to hospitals in Oxford and Derby following self-harm during the period March 23rd to 17th May 2020 recorded whether the self-harm was related to the impact of COVID-19 and, if so, what specific factors were relevant. These factors were organised into

a classification scheme. Information was also collected on patients' demographic characteristics, method of self-harm and suicide intent.

Results

Of 228 patients assessed, in 46.9% (N=107) COVID-19 and lockdown restrictions were identified as influencing self-harm. This applied more to females than males (53.5%, N=68/127 v 38.6%, N=39/101, $\chi^2 = 5.03$, $p=0.025$), but there were no differences in age, methods of self-harm or suicide intent between the two overall groups. The most frequent COVID-related factors were mental health issues, including new and worsening disorders, and cessation or reduction of services (including absence of face-to-face support), isolation and loneliness, reduced contact with key individuals, disruption to normal routine, and entrapment. Multiple, often inter-connected COVID-related factors were identified in many patients.

Conclusions

COVID-related factors were identified as influences in nearly half of individuals presenting to hospitals following self-harm in the period following introduction of lockdown restrictions. Females were particularly affected. The fact that mental health problems, including issues with delivery of care, predominated has implications for organisation of services during such periods. The contribution of isolation, loneliness and sense of entrapment highlight the need for relatives, friends and neighbours to be encouraged to reach out to others, especially those living alone. The classification of COVID-related factors can be used as an aide-memoire for clinicians.

INTRODUCTION

The potential implications of the COVID-19 pandemic for mental health have been well articulated (Holmes et al, 2020), including the possible impacts on suicide and self-harm (Reger et al, 2020; Gunnell et al, 2020; Niederkrotenthaler et al, 2020). While increases in suicide and self-harm are not inevitable (Gunnell et al, 2020), it is likely that the pandemic will nonetheless have important influences on these behaviours. Broadly speaking these might be considered in terms of early influences, especially relating to the threat of the disease and to the public health, political and economic measures necessary to contain it and limit its effects, and then later influences, such as the impact of the pandemic on the economy, employment, finances and population mental health.

One of the most important public health measures in response to the pandemic was the introduction of lockdown restrictions, whereby individuals were asked to remain in their homes to reduce spread of COVID-19 infections. This was introduced in the UK from March 23rd 2020 and continued for nearly two months, until there was some loosening of the restrictions in England after May 11th 2020. A deterioration in mental health in the general population during this period has been reported in the UK (Pierce et al, 2020). Others have noted the potential mental health and psychological consequences of such public health measures (Brooks et al, 2020), including possible impacts on suicide and self-harm (Holmes et al, 2020; Niederkrotenthaler et al, 2020). In a survey of individuals in Canada, those who had been subjected to 'quarantine' due to COVID had increased levels of self-reported suicidal thoughts and self-harm compared to other individuals (Daly et al, 2021). Increased suicidal ideation during lockdown restrictions has also been reported from the USA (Killgore

et al, 2020). However, studies have shown reductions in hospital presentations for self-harm during the early period of the pandemic in Spain (Hernandez-Calle et al, 2020), France (Joilliant et al, 2021), Ireland (McIntyre et al, 2020), and England (Chen et al, 2020; Hawton et al, 2021). Also, early studies have indicated no increase in suicides during the first months of the pandemic in several countries, such as in Queensland in Australia (Leske et al, 2021) and Norway (Qin and Mehlum (2020). Nonetheless, there are major concerns that as the longer-term impacts of the pandemic play out, especially unemployment, financial problems and bereavements, there might be a rise in suicidal behaviour, as has recently been reported from Japan with regard to suicides in females and young people (Tanaka and Okamoto, 2020)

There may be specific impacts of the pandemic due to measures such as lockdown, which might influence self-harm or suicide. In the Canadian survey reported by Daly et al (2021), respondents subject to quarantine reported self-harm had higher levels of depression, anxiety, post-traumatic stress, fear, worry and despair than those not subject to this restriction. Studying the factors influencing suicidal behaviour in relation to the pandemic is important as awareness of these can inform policies for prevention and intervention. This information can also be used to assist healthcare leaders responsible for service configuration and delivery and to help clinicians to be aware of key areas they should address during assessment of individuals in terms of risk or following an act of self-harm. It can in addition be used to inform clinicians of key factors that they might focus on in their therapeutic interventions with patients affected by the pandemic and the consequent public health measures.

We have investigated the factors associated with self-harm (non-fatal self-poisoning and self-injury) in adults presenting to hospital emergency departments during the first two months following the introduction of full lockdown in the UK, using data purposefully collected in two centres with well-established self-harm monitoring systems.

METHOD

Data collection

The study was conducted in the general hospitals in Oxford and Derby, two centres in the Multicentre Study of Self-harm in England (Geuliyov et al, 2016). Information on self-harm presentations is routinely collected through long-established self-harm monitoring systems. Self-harm is defined as intentional non-fatal acts of self-poisoning or self-injury, irrespective of the type of motivation, including degree of suicidal intent (Hawton et al, 2003), the definition adopted by the National Institute for Clinical Excellence (2011). For patients who receive a psychosocial assessment conducted by mental health clinicians in the Emergency Department Psychiatric Service (Oxford) or Liaison Psychiatry Service (Derby) information is collected by the assessing clinician on data collection forms (Oxford) or electronic case records (Derby).

For the purposes of the present study, clinicians conducting psychosocial assessments were asked to complete a simple record following each assessment to indicate whether their impression was that the patient's self-harm was influenced by any factors related to COVID-19, answering YES, UNSURE or NO. If they answered YES or UNSURE they were asked to describe the relevant factors in free text (they

could indicate multiple factors if appropriate). At the beginning of the study the clinicians were informed that there was concern the pandemic might have significant impacts on self-harm. They were asked to record any pandemic-related factors which they thought could have influenced self-harm in individual cases. It was made clear that we were interested in identifying any relevant consequences of the pandemic. However, the clinicians were not given specific instructions to modify their usual assessment procedures, which include asking about factors that may have contributed to self-harm, as well as identifying patients' needs and risks. The clinicians were also sent periodic reminders of the study.

In addition to the above information, the following items were extracted from the usual data collection form in Oxford and the electronic patient record in Derby for all patients receiving a psychosocial assessment during the study period: gender, age, date of presentation, present household composition (Oxford only), method of self-harm and, where available, score on the Suicide Intent Scale (Beck et al 1974) grouped into four categories: low (0-6), moderate (7-12), high (13-20) and very high (21 – 30).

Classification of COVID-related factors influencing self-harm

The clinicians' descriptions of COVID-19 related factors thought to have influenced self-harm recorded for the first 30 individuals for whom this item was recorded as positive (YES/UNSURE rating) in Oxford were initially scrutinised by KH and KL, who each independently formulated a classification of the factors. This was achieved through an inductive content analysis approach (Elos and Kyngas 2008), initially using open coding to draw out common categories. Categories were then compared

and discussed to reach a consensus and the agreed categories informed the classification system which was used in the study (see Table 2). This system was thereafter used by the same team members in Oxford to categorise all the Oxford clinicians' statements for patients whose self-harm was recorded to be related to COVID-19, and similarly by two team members in Derby (JN and KW) for the patients there. Any disagreements in classification were resolved through discussion between the team members at each site. Where necessary there was consultation between the Oxford and Derby teams to sort out uncertainties and ensure consistency of approach.

Patient Samples

The study was of patients aged age 18 years and over. In Oxford the included patients were those presenting during the eight weeks from 23rd March 2020 (i.e. the first day of full lockdown in the UK) to May 17th 2020. In Derby the data were for patients presenting from 2nd April to May 17th 2020.

Because the study was focused on identifying COVID-19-related factors contributing to self-harm, if an individual presented with a repeat episode, the first not having been identified as related to COVID but a subsequent one having been, the latter episode was used as the index presentation for the purposes of the study. However, only one episode per person was included in the analysis.

Data analysis

The patient characteristics and methods of self-harm were compared between those patients in which COVID-19 related factors were thought by the assessing clinician

to have influenced self-harm and those in which this was not thought to be the case using the chi-squared statistic.

The data on the factors in the classification of the clinicians' responses are presented as numbers of patients recorded as positive for each factor. Many patients were recorded as being positive for more than one factor.

The free text information recorded for each of the factors in the classification was read and re-read by KH and KL, again using principles of inductive content analysis (Elos and Kyngas 2008), to elicit common sub-categories within the main categories. Data were stored and organised in Excel.

RESULTS

During the study period following lockdown in the UK, 228 individuals (101 males and 127 females) aged 18 years and over presented to either of the two study hospitals and received a psychosocial assessment from a mental health practitioner (113 in Oxford between March 23rd and May 17th 2020; 115 in Derby between April 2nd and May 17th 2020). Of these, 107 (46.9%) had self-harm episodes which were considered by the clinicians as having been related to the COVID-19 pandemic in some way. This included five cases in which the clinicians had indicated 'unsure' regarding the contribution of the health crisis to the self-harm, but where on review of the indicated factors the research team decided that there appeared to be an association.

Comparison of the patients with identified COVID-19-related factors contributing to self-harm and the remainder of the patients

The patients identified by the clinicians as having COVID-19-related factors influencing their self-harm are compared to the remainder of the patients in Table 1. A greater proportion of female than male patients were identified as having such factors involved in their self-harm (68/127, 53.5% v 39/101, 38.6%; $\chi^2 = 5.03$, $p=0.025$). There were no differences between the two overall groups of patients in terms of age groups, methods of self-harm or living circumstances (Oxford data only), and, where recorded (N=108), in the level of suicide intent.

(Table 1 about here)

COVID-19-related factors contributing to self-harm

Details of the numbers of patients in which the various COVID-19-related factors were recorded as influencing their self-harm are shown in Table 2. The most frequently recorded factors were problems related to mental health, isolation/loneliness, lack of or reduced contact with other individuals, disruption to normal routine, and entrapment. It should be noted that in the majority of cases (64/107; 59.8%) more than one factor attributed to the COVID-19 pandemic was recorded, these factors often being inter-related (see below).

(Table 2 about here)

We now consider in more detail and in order of frequency the specific influences on self-harm identified within each of the categories of factors.

Mental health: a) problems The most frequent problems in this category were anxiety and depression (low mood), which in some cases were new problems and in others

exacerbation of already existing conditions. In many cases they were clearly secondary to other issues, especially fear of infection or of infecting family members (usually in the absence of current physical illness). There were also single cases of onset of severe self-harm in the context of newly diagnosed psychosis in which fear of infection was a major factor, and worsening of problems related to emotionally unstable personality disorder.

Mental health: b) loss or reduction of supports A prominent issue in this category was reduction or cessation of support from services; for example, where the clinicians conducting the psychosocial assessments noted that because clinical support for patients had stopped due to COVID-19 their mental health had deteriorated. This included cessation of AA meetings, which resulted in one patient returning to heavy drinking

A particularly common theme was the impact of face-to-face contact with services having ceased, even when support was available by phone or other means of communication. In one case it was recorded that a likely motive for the self-harm and subsequent ED presentation was a need for face-to-face contact with a clinician. In two cases the individuals' self-harm was related to lockdown preventing them obtaining medication prescribed for psychiatric disorders.

Isolation/loneliness A sense of isolation and/or loneliness resulting from lockdown and lack of contact with others was a frequent factor contributing to self-harm. In several cases it was recorded as the sole COVID-19 factor influencing self-harm. In Oxford, where data were available on living situation, 20 individuals were recorded

as living alone, in nine (45.0%) of which loneliness or social isolation was identified as a factor relating to their self-harm.

Lack of contact or reduced contact a) with family Several patients were recorded as being affected by being unable to have face-to-face contact with their families, in some cases because they were geographically separated, even in different countries, and travel restrictions prevented access. For some individuals the lack of contact with their families was due to self-isolation either of themselves or of a family member because of health issues increasing dangers associated with infection. Loss of support from family members was a consequent contributory factor in some individuals' self-harm. Some parents who self-harmed had particularly missed contact with their children. There were also examples of individuals being unable to have contact with a partner.

Lack of contact or reduced contact b) with social network The impact of lockdown on relationships with friends and social networks was an important factor in the self-harm of several individuals. This was often because of loss of support usually provided by friends.

Disruption to normal routine The psychological effects of having their normal routine disrupted was a factor contributing to self-harm in several patients. This included lacking a routine or structure, having nothing to do and specific disruption of plans (e.g. travel abroad, house sale).

Entrapment This was a relatively common contributory factor, with some patients finding their feeling trapped at home intolerable. In some this was simply identified as being unable to cope with lockdown.

Interpersonal conflict This was identified as a factor influencing self-harm in several individuals. It included lockdown having contributed to worsening of a previously difficult relationship with a partner or a relationship coming under strain, conflict or tension between family members, and breakup of relationships with partners.

Employment COVID-19-related employment issues were identified by the clinicians as contributing to self-harm in some patients. This applying to somewhat more males than females. These included individuals who were unemployed but unable to seek work because of lockdown, others who had become unemployed because of the pandemic, individuals who had been unable to continue their usual work due to vulnerability resulting from physical health problems or underlying health issues necessitating shielding, and some whose self-harm was related to being furloughed.

Fear of infection The most common infection fear identified as contributing to self-harm was about individuals themselves becoming infected with COVID-19. In a couple of cases the fear was extreme, one individual believing that if they got infected they would die and therefore might as well kill themselves first. Another patient greatly changed their eating habits as they thought this could provide protection against infection. Two patients feared that if they became infected with COVID-19 they would transmit this to vulnerable relatives.

Some patients had general concerns about family members becoming infected, either due to their working on the acute healthcare front line or because of other specific vulnerability.

Accommodation/housing There were several individuals where problems related to accommodation or housing resulting from restrictions due to the pandemic were thought to have influenced their self-harm. This was for a variety of reasons, including being stuck in student accommodation or unsuitable housing, and being unable to move into more suitable accommodation.

Education/training This was recorded as a factor in a few cases, in all of which other factors were also identified. For some, it was the inability to continue educational studies and in one the stress of providing home schooling.

Financial Problems These were either worries about finances or an actual lack of funds, usually secondary to lockdown, mostly because of loss of a job or inability to get work. These problems were identified in more men than women.

General concerns about the COVID-19 pandemic A few patients were identified as having general concerns about the impact of the pandemic, including worrying about the numbers of people who had died.

Alcohol/drug misuse In the few cases in which alcohol misuse was considered a pandemic-related factor during lockdown this involved increased drinking, including cessation of a long period of abstinence in one individual with alcohol use disorder,

and another who contravened lockdown restrictions to access both alcohol and drugs.

Domestic Abuse While not a common contributory factor, it was recorded for some female patients who felt threatened by previously violent male partners.

Bereavement due to COVID-19 infection In a single case the key factor identified as associated with self-harm was death of a partner from COVID-19 infection.

Other problems There was a small number of patients where the factors identified did not fit in one of the above categories. These included sleep disturbance, boredom and struggling to cope as a carer for family members,

Inter-relationship between factors

For many patients there were multiple inter-related factors resulting from the COVID-19 pandemic that had contributed to their self-harm. The following are examples (details modified to preserve anonymity):

A patient with mental health problems was anxious about leaving their house because of risk of infection. Their contact with their parents had been much reduced. A care assistant was no longer visiting and contacts with mental health workers were now only by phone.

A patient whose child and another relative had been infected with COVID had subsequently become increasingly depressed and anxious. Their partner

worked in a care setting where personal protective equipment had been limited, which further increased their anxiety, and added to their sense of isolation and low mood.

A patient with mental health problems living with a volatile partner found their constantly being together at home and consequent arguments increasingly stressful. They felt trapped, a feeling that was exacerbated by a delay in provision of previously planned treatment for their psychiatric problems.

DISCUSSION

We have used data collected through two well-established hospital-based self-harm monitoring systems and information recorded by clinicians based on their psychosocial assessments conducted with patients to investigate the extent to which the COVID-19 pandemic may have influenced self-harm, and the factors that contributed to self-harm during the two months following introduction of lockdown restrictions. The clinicians' assessments indicated that COVID-19-related factors influenced self-harm for nearly half of the patients. This was the case for 53.5% of the females compared with 38.6% of the males, suggesting that lockdown may have been more stressful for females. This is in keeping with evidence that the overall impact of the early stages of the pandemic on mental health has been greater for women than men (Vindegaard and Benros, 2020) and the fact that the increase in suicide rates in females in the autumn of 2020 in Japan occurred largely in women (Tanaka and Okamo, 2020) . However, in our study there were no differences between those whose self-harm were assessed as being related to COVID-19 compared with those for whom it was not in terms of age, methods of self-harm or suicide intent. This

suggests that the severity of self-harm did not differ between the two groups of patients, either physically or psychologically.

The most frequent COVID-19-related factors recorded by clinicians concerned mental health. These included onset or exacerbation of mental health problems and reduced availability of services. The latter included inability to have face-to-face contact with clinicians. The World Health Organization has highlighted disruption of mental health services in many countries resulting from the pandemic, especially those delivering psychotherapy and counselling (World Health Organization, 2020). This suggests that there must be care in remodeling psychiatric services because of the pandemic (Moreno et al, 2020), including ensuring that remote working is not regarded as the norm and that the needs and risks of individual patients are taken into account.

The next most frequent COVID-19-related factors concerned those likely to be directly related to lockdown restrictions, namely isolation and loneliness, reduced contact with families and friends, disruption of normal routine and a sense of entrapment. These findings are largely in keeping with predicted psychological impacts of lockdown (Holmes et al, 2020) and those found in relation to previous viral epidemics necessitating similar public health measures (Brookes et al, 2020). They highlight the need for relatives, friends and neighbours to be encouraged to reach out to others, especially those living alone, to help provide a sense of socialisation and support, including through telephone and internet communication where face-to-face contact is not possible.

While some expected consequences of the COVID-19 pandemic such as employment and financial problems (Gunnell et al 2020; Niederkrotenthaler, 2020) were not frequently identified in this series of patients, this is likely to be due to the focus having been on the early stages of the pandemic, together with the impact of UK government initiatives to protect jobs through furloughing and other financial supports. However, there was some indication from this study that in the early phase of the pandemic these problems were more prevalent in men than women who self-harmed. Economic and financial factors are likely to become more influential as the longer term impacts of the pandemic develop.

Multiple COVID-19-related factors were often identified as influencing self-harm in individual cases, with specific factors such as isolation, entrapment and interpersonal difficulties seeming to initiate a sequence of other influences related to the pandemic. Reduced access to the mental health services and other means of support were often part of the matrix of factors.

The findings of this study have implications for clinical practice and the organisation of services during the pandemic and its aftermath. They highlight factors that clinicians assessing patients who have self-harmed can be sensitive to during their assessments. The categorisation of factors we have developed might be used as an aide-memoire while conducting assessments and safety planning (a blank version with example of each factor is included as an Appendix to assist with this). We have already noted that a cautious approach should be taken to deciding who, and who may not, be suitable for remote clinical care for psychiatric problems, although of course physical safety of both patients and staff must be a priority consideration.

Every effort should be made to sustain mental health services in a way that is responsive to the needs of individuals and the community, even during very difficult circumstances (Moreno et al, 2020). Our findings are not just relevant historically, but also to potential developments of this and future pandemics, including necessary reintroduction of stringent public health measures to address recurrence of disease spread.

The study methodology and findings also have relevance for future research. Our classification, which was based on clinicians' impressions, might be developed into an interview schedule. It will be important to see whether influences of the pandemic change with time, especially as longer-term consequences develop. This should include investigation of gender differences, especially as we found that COVID-19-related factors appeared to influence self-harm in a greater proportion of females than males, but also that more of the men than the women were experiencing employment and financial problems related to the pandemic. Research regarding both clinician and service user perspectives of provision of clinical care under the restrictions consequent on the pandemic and resulting public health measures is clearly required in order to optimise clinical interventions.

Strengths and limitations

One strength of the study is that it was conducted in two centres with very different catchment area population characteristics in terms of levels of socio-economic deprivation (Geulyov et al 2016). Also, the clinicians' responses regarding the COVID-19-related factors influencing self-harm were spontaneous and not influenced by a structured questionnaire. However, this may also have meant that

some relevant factors were not identified for some patients. Furthermore, differences in experience and profession of the clinicians could have affected the findings. They were nearly all mental health nurses and junior doctors in psychiatric training. It is known that there may be some differences between these groups in management of self-harm (Murphy et al. 2010), although patient outcomes seem to be similar (Pitman et al, 2020). However, during this study the staff profiles remained fairly consistent.

It could be argued that we should have employed a more sophisticated analytical approach. This might have included a formal qualitative study of clinician responses, without utilizing a classification system developed on the basis of the factors identified by clinicians in the initial phase of the project. Another criticism might be that we compounded a quasi-qualitative approach with a numerical one in which we counted the number of COVID-related factors identified across the whole group of patients. However, we believe that our approach was a reasonable and pragmatic one, especially as the study was conducted under very difficult circumstances early in the pandemic and there was an urgent need to identify the its most important effects.

A further limitation is the fact that the patients included in the study were, of necessity, only those who received a psychosocial assessment. While the rates of assessment are very high in both centres compared with those found nationally (Cooper et al, 2013), it is recognised that patients who do not receive an assessment may differ from those who do with regard to gender, method of self-harm and other characteristics such as alcohol use (Hickey et al 2001; Bennewith et al 2005; Kapur et al 2008), which could also apply to whether the pandemic influenced their self-

harm. However, we did not find any difference in the methods of self-harm used by the assessed patients with and without COVID-19 factors influencing their self-harm. Scores on the Suicide Intent Scale were not available for a substantial proportion of patients.

Lastly, the study was focused on a limited time period, for most of which extreme restrictions were in place. The nature of problems influencing self-harm may well change over time, including during different phases of restrictions and consequences of the pandemic.

Conclusions

More frequent factors related to the COVID-19 pandemic which were assessed by clinicians as having influenced self-harm in the early phase of the pandemic following introduction of lockdown included mental health problems and restricted mental health service provision, isolation and loneliness, reduced contact with friends or family members, disruption of normal routine and entrapment. It would be interesting to see if similar findings applied to patients being seen by emergency psychiatric services. It will be important to see how factors influencing self-harm might change as the pandemic and its consequences develop over time, including during further periods of restrictions and especially in relation to worsening employment and financial issues.

The results have implications for mental health service provision and social responses to the pandemic and consequent public health measures. The findings are relevant to future responses to the pandemic, especially if and where lockdown

is reintroduced. The classification system developed during the study can help clinicians who are assessing people who have self-harmed, including when they are engaging in safety planning.

Contributors

KH and KL were responsible for study conception and design, and interpretation of the results. KH, KR and DC were responsible for data analysis. LB, FB, JN, KW and SK acquired the data. KH and KL drafted the report, which all authors critically revised for intellectual content. All authors approved the final report and are accountable for all aspects of this work. KH supervised the study and is the guarantor.

Declaration of interests

KH declare grants from the National Institute for Health Research and the Department of Health and Social Care. He is a member of the National Suicide Prevention Strategy for England Advisory Group. All other authors declare no competing interests.

KH is a National Institute for Health Research (NIHR) Senior Investigator (Emeritus). The views expressed are those of the authors and not necessarily those of the NHS, the NIHR, or the Department of Health and Social Care.

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References

- Beck, A., Schuyler, D., Herman, J. (1974) Beck, A., Schuyler, D. & Herman, J. Development of suicidal intent scales. In *The Prediction of Suicide*. (eds A. Beck, H. Resnik & D. J. Lettieri), pp. 45-56. Bowie, MD: Charles.
- Bennewith, O., Peters, T.J, Hawton, K., House, A., Gunnell, D. (2005) Factors associated with the non-assessment of self-harm patients attending an Accident and Emergency Department: Results of a national study. *Journal of Affective Disorders*, 89, 91-97.
- Brooks, S.K., Webster, R.K., Smith, L.E., Woodland, L., Wessely, S., Greenberg, N., Rubin, G.J. (2020) The psychological impact of quarantine and how to reduce it: rapid review of the evidence. *The Lancet* 395, 912-920.
- Chen, S., Jones, P.B., Underwood, B.R., Moore, A., Bullmore, E.T., Banerjee, S., Osimo, E.F., Deakin, J.B., Hatfield, C.F., Thompson, F.J., Artingstall, J.D., Slann, M.P., Lewis, J.R., Cardinal, R.N. (2020) The early impact of COVID-19 on mental health and community physical health services and their patients' mortality in Cambridgeshire and Peterborough, UK. *Journal of Psychiatric Research*, 131, 244-254.
- Cooper, J., Steeg, S., Bennewith, O., Lowe, M., Gunnell, D., House, A., Hawton, K., Kapur, N. (2013) Are hospital services for self-harm getting better? An observational study examining management, service provision and temporal trends. *BMJ Open* 3: e003444. doi:10.1136/ bmjopen-2013-003444
- Daly, Z., Sleman, A., Richardson, C.G., Salway, T., McAuliffe, C., Gadermann, A.M., Thomson, K.C., Hirani, S., Jenkins, E.K. (2021) Associations between periods of COVID-19 quarantine and mental health in Canada. *Psychiatry Research*, 295, 113631,
- Elo, S., Kyngä, S. H. (2008) The qualitative content analysis process. *Journal of Advanced Nursing*, 62, 107–115.
- Geulayov, G., Kapur, N., Turnbull, P., Clements, C., Waters, K., Ness, J., Townsend, E., Hawton, K. (2016) Epidemiology and trends in non-fatal self-harm in three centres in England, 2000-2012: findings from the Multicentre Study of Self-harm in England. *BMJ Open* 6, e010538.
- Gunnell, D., Appleby, L., Arensman, E., Hawton, K., John, A., Kapur, N., Khan, M., O'Connor, R., Pirkis, J. and the COVID-19 Suicide Prevention Research Collaboration (2020) Suicide risk and prevention during the COVID-19 pandemic. *The Lancet Psychiatry* 7, 468-471.
- Hawton, K., Casey, D., Bale, E., Brand, F., Ness, J., Waters, K., Kelly, S., Geulayov, G. (2021) Self-harm during the early period of the COVID-19 Pandemic in England: comparative trend analysis of hospital presentations. *Journal of Affective Disorders* 282, 991-995.

Hawton, K., Harriss, L., Hall, S., Simkin, S., Bale, E., Bond, A. (2003) Deliberate self-harm in Oxford, 1990-2000: A time of change in patient characteristics. *Psychological Medicine*, 33, 987-96.

Hernandez-Calle, D., Martinez-Ales, G., Mediavilla, R., Aguirre, P., Rodriguez-Vega, B., Bravo-Ortiz, M.F. (2020) Trends in psychiatric emergency department visits due to suicidal ideation and suicide attempts during the COVID-19 pandemic in Madrid, Spain. *Journal of Clinical Psychiatry*, 81:2013419.

Hickey, L. Hawton, K., Fagg, J., Weitzel, H. (2001) Deliberate self-harm patients who leave the accident and emergency department without a psychiatric assessment: A neglected population at risk of suicide. *Journal of Psychosomatic Research*, 50, 87-93.

Holmes, E.A., O'Connor, R., Perry, V.H., Tracey, I., Wessely, S., Arseneault, L., Ballard, C., Christensen, H., Cohen Silver, R., Everall, I., Ford, T., John, A., Kabir, T., King, K., Madan, I., Michie, S., Przybylski, A., Shafran, R., Sweeney, A., Worthman, C.M., Yardley, L., Cowan, K., Cope, C., Hotopft, M., Bullmore, E. (2020) Multidisciplinary research priorities for the COVID-19 pandemic: a call for action for mental health science. *The Lancet Psychiatry*, 7, 547-560.

Joilliant, F., Roussot, A., Corruble, E., Chauvet-Gelinier, J-C., Falissard, B., Mikaeloff, Y., Quanti, C. (2021) Hospitalization for self-harm during the early months of the Covid-19 pandemic in France: a nationwide study. medRxiv
<https://www.medrxiv.org/content/10.1101/2020.12.18.20248480v1.full>

Kapur, N., Murphy, E., Cooper, J., Bergen, H., Hawton, K., Simkin, S., Casey, D., Horrocks, J., Lilley, R., Noble, R., & Owens, D. (2008) Psychosocial assessment following self-harm: Results from the Multi-Centre Monitoring of Self-Harm Project. *Journal of Affective Disorders*, 106, 285–293. <https://doi.org/10.1016/j.jad.2007.07.010>

Killgore, W.D.S., Cloonan, S.A., Taylor, E.C., Allbright, M.C., Dailey, N.S. (2020) Trends in suicidal ideation over the first three months of COVID-19 lockdowns. *Psychiatry Research*, 293, 113390

Leske, S., Kõlves, K., Crompton, D., Arensman, E., de Leo, D. (2021) Real-time suicide mortality data from police reports in Queensland, Australia, during the COVID-19 pandemic: an interrupted time-series analysis. *The Lancet Psychiatry*, 8, 58-63.

McIntyre, A., Tong, K., McMahon, E., Doherty, A.M. (2020) COVID-19 and its effect on emergency presentations to a tertiary hospital with self-harm in Ireland. *Irish Journal of Psychological Medicine*, doi: <https://doi.org/10.1017/ipm.2020.116>.

Moreno, C., Wykes, T., Galderisi, S., Nordentoft, M., Crossley, N., Jones, N., Cannon, M., Correll, C.Y., Byrne, L., Carr, S., Chen, E.Y.H., Gorwood, P., Johnson, S., Kärkkäinen, H., Krystal, J.H., Lee, J., Lieberman, J., López-Jaramillo, C., Männikkö, M., Phillips, M.R., Uchida, H., Vieta, E., Vita, A., Arango, C. (2020) How mental health care should change as a consequence of the COVID-19 pandemic. *The Lancet Psychiatry*, 7, 813-824.

Murphy, E., Kapur, N., Webb, R., Cooper, J. (2010) Risk assessment following self-harm: comparison of mental health nurses and psychiatrists. *Journal of Advanced Nursing* 67, 127–139.

National Institute for Clinical Excellence (2011) *Self-Harm: Longer-Term Management (CG133)*. National Institute for Clinical Excellence: London.

Niederkrotenthaler, T., Gunnell, D., Arensman, E., Pirkis, J., Appleby, L., Hawton, K., John, A., Kapur, N., Khan, M., O'Connor, R., Platt, S. and The International COVID-19 Suicide Prevention Research Collaboration. (2020) Suicide research, prevention, and COVID-19: towards a global response and the establishment of an international research collaboration. *Crisis*, 41, 321-330.

Pierce, M., Hope, H., Ford, T., Hatch, S., Hotopf, M., John, A., Webb, R., Wessely, S., McManus, S., Abel, K.M. (2020) Mental health before and during the COVID-19 pandemic: a longitudinal probability sample survey of the UK population. *The Lancet Psychiatry*, 7, 25-920.

Pitman, A., Tsiachristas, A., Casey, D., Geulayov, G., Brand, F., Bale, E., Hawton, K. (2020) Comparing short-term risk of repeat self-harm after psychosocial assessment of patients who self-harm by psychiatrists or psychiatric nurses in emergency departments: cohort study in England. *Journal of Affective Disorders*, 272, 158-165.

Qin, P., Mehlum, L. (2020) National observation of death by suicide in the first 3 months under COVID-19 pandemic. *Acta psychiatrica Scandinavica*, <https://doi.org/10.1111/acps.13246> Reger, M.A., Stanley, I.H., Joiner, T.E. (2020) Suicide mortality and Coronavirus disease 2019—A perfect storm? *Journal of American Medical Association Psychiatry*. doi:10.1001/jamapsychiatry.2020.1060.

Tanaka, T., Okamoto, S. (2021) Increase in suicide following an initial decline during the COVID-19 pandemic in Japan. *Nature Human Behaviour*, 5, 220-238.

Vindegaard, N., Benros, M.E. (2020) COVID-19 pandemic and mental health consequences: Systematic review of the current evidence. *Brain, Behavior, and Immunity*, 89, 531-542.

World Health Organization (2020) *The impact of COVID-19 on mental, neurological and substance use services; results of a rapid assessment*. Geneva: World Health Organization.

Table 1 Comparison of patients in which COVID-19-related factors were and were not identified

	Covid-related N=107	Non-covid N=121	Total N=228	X² (df*) P
Centre:				
Oxford individuals	59 (55.1%)	54 (44.6%)	113	X ² _(1df) =2.51
Derby individuals	48 (44.9%)	67 (55.4%)	115	0.113
Gender				
Male	39 (36.4%)	62 (51.2%)	101	X ² _(1df) =5.03
Female	68 (63.6%)	59 (48.8%)	127	0.025*
Age group				
18-34 yrs	56 (52.3%)	65 (53.7%)	121	
35-54 yrs	36 (33.6%)	40 (33.1%)	76	X ² _(2df) =0.05
55+ yrs	15 (14.0%)	16 (13.2%)	31	0.974
Method of SH				
Self-poisoning	81 (75.7%)	81 (66.9%)	162	
Self-injury	25 (23.4%)	40 (33.1%)	65	X ² _(3df) =3.62
Both	1 (0.9%)	0 (0.0%)	1	0.164
Suicide Intent category, where recorded	N=61	N=47	N=108	
Low (0-6)	38 (62.3%)	30 (63.8%)	68	
Moderate (7-12)	15 (24.6%)	13 (33.1%)	28	
High (13-20)	6 (9.8%)	3 (2.5%)	9	X ² _(3df) =0.61
Very High (21-30)	2 (3.3%)	1 (0.8%)	3	0.89
Usual Household (Oxford Only, where recorded)	N=58	N=46	N=104	
Spouse/cohabitee or other family/friends	26 (44.8%)	27 (58.7%)	53	
Alone	20 (34.5%)	14 (30.4%)	34	X _(2df) =2.61
Lodgings/hostel/institution/no fixed abode	12 (20.7%)	5 (10.9%)	17	0.271

*df = degrees of freedom

Table 2 COVID-19-related factors identified as influencing self-harm, by gender

Factors influencing Self-harm	Males (N=39)	Females (N=68)	Total (N=107)
Overall mental health problems	11	22	33
Mental health/worsening of mental health	5	15	20
Loss/reduction of supports for mental health problems	7	10	17
Isolation /Loneliness	14	17	31
Lack/reduced contact	9	14	23
Lack/ reduced contact with family	5	10	15
Reduced contact with social network	4	6	10
Disruption to normal routine	6	14	20
Entrapment	5	13	18
Interpersonal conflict	3	9	12
Employment (including loss/furloughed)	9	3	12
Fear of COVID infection	3	7	10
Self becoming infected	2	3	5
Self infecting others	0	2	2
Others becoming infected	2	3	5
Accommodation/housing	3	4	7
Education/ training	1	6	7
Financial	5	1	6
General concerns about impact of Covid	0	5	5
Substance misuse	2	2	4
Alcohol	2	2	4
Drugs	1	0	1
Domestic abuse (actual/threatened)	0	3	3
Bereavement due to Covid	0	1	1
Other	2	2	4

COVID RELATED PROBLEMS	EXAMPLES/EXPLANATION
Mental health problems	Worsening of existing mental health problem/condition or a new mental health problem
Access to services	Mental health problem exacerbated by cessation or reduction of usual support services e.g., not finding virtual care delivery as effective as face to face
Isolation and loneliness	E.g., consequences of reduced contact with friends or family; people living alone and/or with limited social support networks who now have less access to the outside world
Reduced contact with family	E.g., children unable to visit due to parent being at high risk; or usual contact/support from family reduced; parents unable to have contact with children
Reduced contact with friends	E.g., virtual contact not the same as face to face and not able to see friends due to restrictions
Disruption to normal routine	E.g., unable to engage in usual activities such as sport. Include disruption to planned events e.g., house move, holiday etc
Entrapment	E.g., Feeling trapped in the house or with people they would rather not be with; simply finding lockdown difficult
Interpersonal conflict	E.g., strains in relationship with partner/family member due to being together so much more of the time
Employment	E.g., furlough, job loss, lack of job opportunities, unhappy working at home
Education/training	E.g., struggling with virtual learning; coping with returning to school following lockdown; apprenticeships stopped
Financial concerns	E.g., as a result of job loss/income reduction
Accommodation/housing	E.g., loss of accommodation or having to stay in accommodation they are unhappy with due to the pandemic
Substance misuse	E.g., increase in intake since lockdown; breaching lockdown rules to obtain drugs or alcohol
Domestic abuse	Actual or threatened
Fear of COVID-19 infection	Fear of self becoming infected, fear of self infecting others, fear of others becoming infected
General COVID-19 related concerns	E.g., fears of the impact of the pandemic on the future; a sense of being generally overwhelmed by the pandemic
Bereavement issues	E.g., Loss of someone who died following COVID-19 infection or loss not COVID-19 related but unable to carry out usual rituals such as family visits or funeral processes

Other	E.g., disturbed sleep due to concerns about the pandemic; reversed sleep pattern due to lack of routine; difficulties carrying out caring or home schooling; boredom
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Appendix COVID-19-related factors that may influence self-harm. Aide-memoire to assist clinicians assessing patients