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RESEARCH ARTICLE

# The expanding backlog of mental health patients and the continued toll of zero-COVID policy on healthcare settings

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ABSTRACT

**Aim and Scope:** Prior research has shown that isolation measures implemented to contain previous pandemics had led to negative impacts on mental health. There has been increased awareness of mental health issues over the past few years with more patients encouraged to seek help. Nevertheless, operational restrictions imposed on the health services to contain COVID-19 have resulted in reduced capacity in the health service. We have aimed to measure the combined effects of increased demand and reduction in capacity on the backlog of patients awaiting access to specialist care in Scotland.

**Design:** To quantify the effect that the present pandemic has had on access to specialist care, comprehensive data on referrals by general practitioners (GPs) for specialist mental health support was obtained for 2016-2020 period following Freedom of Information (FOI) requests to all 14 health boards of National Health Service (NHS) Scotland.

**Results:** Monthly GP referral counts accumulated across all health boards revealed the extent of demand for specialist mental health support. Prior to the pandemic there was a 4-5% annual rise in the number of mental health related GP referrals in Scotland. Pandemic related restrictions imposed to curb infections has led to a higher incidence of mental health problems. However, there was a 27% drop in referrals in 2020 alone, affecting an estimated 43,522 patients. The reduction on mental health provisions is similar in profile to the drop in number of planned hospital admissions.

**Conclusions:** Policies to combat COVID-19 resulted in significant negative impacts on the mental health of the population. The continued restrictions on healthcare settings limit their operations, resulting in long waiting lists for accessing specialist care. Despite some easing for restrictions on public, restrictions on healthcare settings place strict limits on their operations and therefore are detrimental to public health.

**Keywords:** Mental Health, General Practitioner, Referrals, COVID-19

## Introduction

Infectious disease outbreaks often have a community impact comparable to other world disasters causing fatalities, a sense of unpredictability, and lingering effects on the population.[1] In response to mass emergencies and natural disasters, communities often gather together in order to engage a collective social resilience.[1,2] However, communities affected by disease outbreaks are required to maintain the opposite, isolation. In response to the COVID-19 pandemic many countries, including the United Kingdom, chose to implement widespread quarantine procedures. The key aspect of the lockdown measure was the strict ruling for the population to stay at home and avoid normal social interactions. When social interactions are inhibited, it stands to reason that the psychosocial effects may go unchecked. The lockdown measures were established with a singular focus of limiting the spread of COVID-19 and little attention was paid to the mental health consequences of such measures. In addition, immediate and strict curbs were placed on the operation of healthcare providers as the virus was classed as highly contagious with high prevalence of fatality. These restrictions caused further capacity limits resulting in a severe reduction in provision of specialist services, further compounding the detrimental effects on patients.

## Mental health in previous outbreaks

There is ample evidence that stress caused by isolation in quarantine and the fear of disease increase the incidence of mental health disorders in both the public and, more specifically, healthcare workers at the frontline of the pandemic. A study of psychological effects of quarantine during and after the 2003 SARS outbreak in Canada found a substantial proportion of individuals exhibited symptoms of Post-Traumatic Stress Disorder (PTSD) and depression.[3] Health workers also showed more signs of depressive symptoms and anxiety even 1-3 years post-outbreak.[4,5] Jeong et al. (2016) measured the frequency of anxiety and anger in people who were isolated due to the 2015 outbreak of Middle East Respiratory Syndrome in Korea, showing that a significant proportion exhibited high anxiety and anger 6 months post isolation period.[6] Behavioural changes such as increased avoidance behaviours; avoiding direct contact with others, limiting social contact, inability to work, and avoiding enclosed or crowded spaces have been reported after the previous outbreaks.[7] Outbreaks and quarantines have been shown to have harmful effects on mental well-being of children with up to 30% of children isolated reported experiencing symptoms of PTSD.[1]

## Mental health and COVID-19

There is a body of research reporting increased depressive symptoms, anxiety, and psychological stress in the current pandemic. O'Connor et al (2020) reported an alarming increase in incidence of depressive symptoms with one in four (25%) adults reporting such symptoms, compared to a previous year incidence of one in eighteen (5.6%).[8] These findings were in line with data published by the UK Office for national Statistics (ONS) which reported depressive symptoms in 19.2% of adults in June 2020, noting an increase from 9.7% in the months prior to the pandemic.[9] The pandemic has presented a host of challenges resulting in mass uncertainty across all aspects of life such as personal finances, employment, health scares, and the safety of vulnerable loved ones. Such sustained periods of uncertainty have been shown to cause increased psychological distress and anxiety amongst the public.[10-13]

Previous research has recognised loss of employment and financial instability as having a significant impact on suicide risk.[14] Data from Scottish Government reports an increase of 89.3% in people claiming benefits principally related to unemployment between February 2020 and February 2021.[15] In a recent study, for the same time period, a significant increase in rates of suicide ideation in the young adult population was reported.[8] In Scotland, the full report on the incidence of suicide during the pandemic had not been released, but the most recent report indicates a 30% higher incidence of suicides than usual between the months of July to September in 2020 and an overall increase in rate compared to the 2011-2015 trend.[16] At the time of writing, the report for suicides in 2021 is not yet released.

## Mental Health service referrals in Scotland

All the evidence from previous outbreaks and the current pandemic suggest that social isolation leads to a major increase in the incidence of a wide range of mental health problems including anxiety, depression, and suicidal ideation. To investigate the adverse mental health effect of the pandemic on the adult population in Scotland, we intended to

ascertain the rate of referrals for specialised mental health support by general practitioners. To put the data into context, and determine the year-on-year trends, we also requested monthly referral data on the same metric for the previous years.

## Methods

### Patient and Public Involvement

No patients were directly involved in this study.

### Ethical approval

Following review, ethical approval for this project was granted by Psychology Ethics Committee (PEC/4607/2020/11), University of Aberdeen. As the data related to the total number of patients referred, no individual consent was required.

### Data collection

Available data on the Scottish Government dashboards do not provide breakdown of referrals. As we intended to establish year on year trend, further details of referrals in the previous years were also needed. Therefore, FOI requests were submitted to all Scottish National Health Boards requesting monthly data on mental health referrals by GPs between 2016 and 2020. All 14 Scottish National Health Boards responded positively to our FOI request providing their available data. We have provided all raw data as well as summaries on Open Science Forum.[17] For 11 health boards, the data was comprehensive and included mental health referrals from General Practitioner services for the period 2016-2020 broken down to monthly figures. In three cases there were limited exceptions. In two health boards of Greater Glasgow & Clyde and Fife, data for all of 2016 was missing. In one health board three months data in 2016 (Orkney) and in another, data for six months in 2017 (Fife) was also unavailable. To ensure a complete overview of the number of GP mental health referrals in Scotland, the small number of missing data fields were replaced by best estimates using linear extrapolation of existing monthly data for the same NHS board. In two cases of Orkney and Fife where part of one year data was missing, the monthly average for that year was assigned to the missing months. In case of NHS Highland, due to an administrative error, there was an anomaly in data reported for December 2019, showing an abnormally high referrals (2378) compared to previous 11-month average of 893 cases. This increased number had been a correction in records attributed to referral figures for the entire 2019 and hence the difference from the monthly average was distributed to the full year.

## Results

Figure 1 shows monthly GP mental health referrals summed across all 14 Scottish health boards from 2016 till 2020. For 2016-2019 data seems remarkably similar with uniform distribution throughout the year. The total referrals were 126,385; 128,623; 136,937; & 143,216 for years 2016-2019 respectively. The year-on-year increase is distributed evenly across the months with very few exceptions, indicating that from 2017 till 2019, the total numbers increased 2%, 6% and 5% compared to the previous year, leading to an average of 4% annual increase over 4 years. In contrast, data for 2020 showed a marked reduction (104,497 cases) of 27% compared to the previous year.

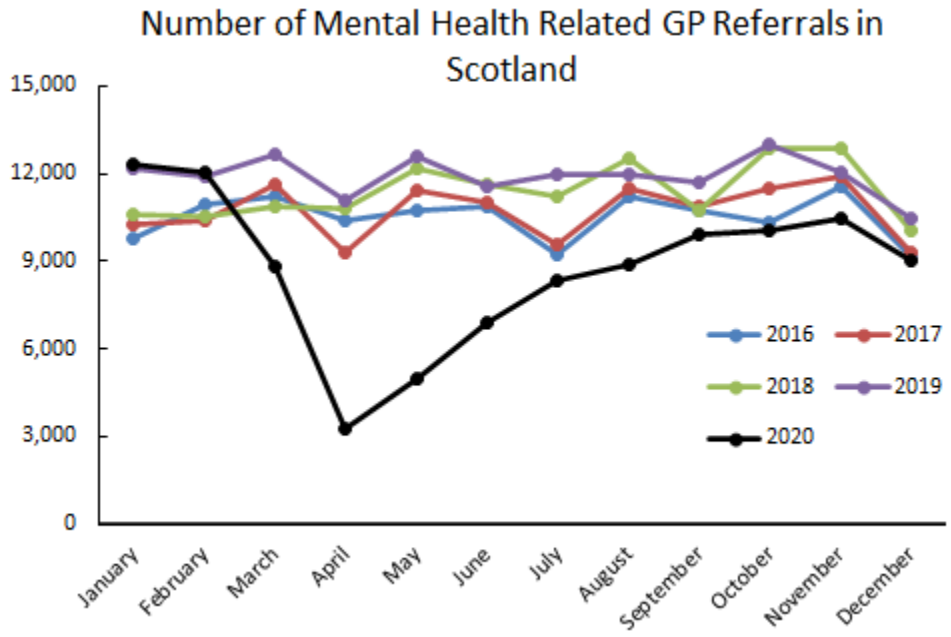


**Figure 1:** Number of mental health related GP referrals in Scotland, monthly referral data was summed up across all 14 Scottish NHS boards for 2016-2020.

The first two months of the year in 2020 show referral numbers as expected from the previous years, but the sudden sharp reduction coincided with the start of the pandemic in March with the lowest referral number for April 2020. There was a steady recovery in subsequent months of 2020, but the referral numbers did not reach the pre-pandemic level, even by the end of December 2020.

To estimate the true number of cases requiring referral based on previous years' data, for each month we extrapolated the figures to 2020, based on a linear interpolation of data from 2016-2019 at each month. This estimated number is plotted versus the actual number of referrals in Figure 2. This method of interpolation is consistent with a 4% annual increase in previous years (estimated total 148,493).

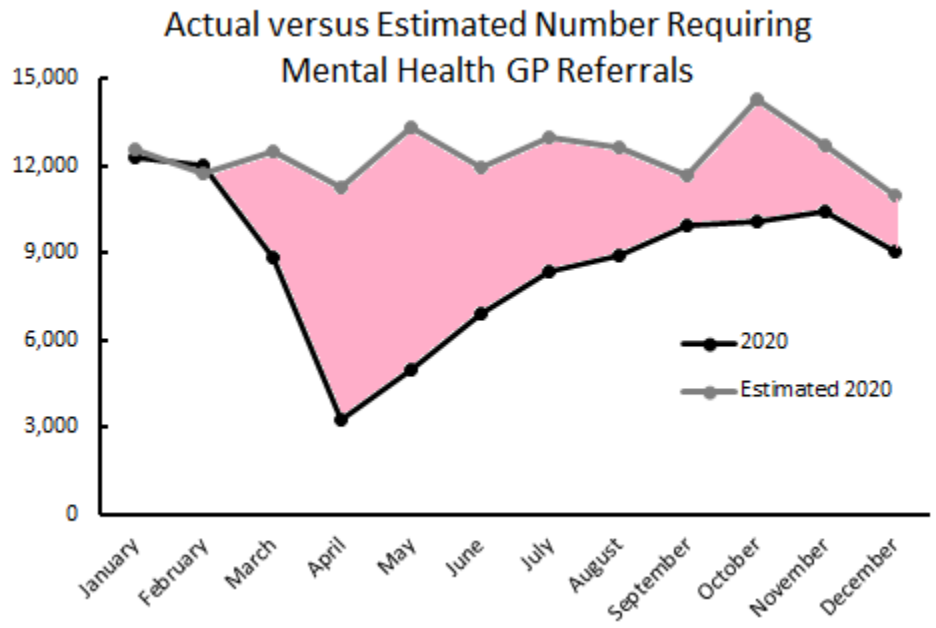


**Figure 2:** Actual versus estimated number of patients requiring mental health GP referrals for 2020 in Scotland.

Summing the total of the shaded area indicates the difference between actual number of referrals and the predicted total. This analysis indicates that in 2020, the GP referrals for specialist mental health support was lower than expected by 43,522 cases. It is important to note that prior research, of both previous outbreaks and the present pandemic, indicate that the psychosocial consequences of pandemic related restrictions always lead to higher incidences of mental health disorders. In certain conditions, such as depressive disorders, this may increase to up to twice the number of incidences under normal times. The result of this suggests that the demand for specialist care must be significantly higher, and that the estimated 43K patients not referred in 2020 alone is a highly conservative figure. The analysis below shows that across all specialities, Scottish National Health services in the second year of the pandemic functioned around a third below pre-pandemic capacity levels. In the context of mental health referrals, this means the backlog of patients requiring much needed specialist care is ever increasing.

**Comparison with reduction in planned hospital admissions**

It is important to place the reduction in mental health referral rates in the context of all other specialities to obtain an estimate of the extent of challenges facing healthcare systems. Data on planned hospital admissions extracted from the government dashboard for all 14 NHS boards.[18] Figure 3 shows the number of monthly planned hospital admissions in all Scottish Health boards for 2020-2021. Average of planned admissions for 2018-2019 is plotted for comparison. In the first year of the pandemic planned admissions dropped from the average of 181K to 120K, a drop of 34%. The strong "Stay at home and save the NHS" campaign together with the cancellation of most routine surgery led to a 70% drop in hospital admissions in April. To correct the course, a government campaign to persuade the general public to access healthcare services was launched in April 2020.[19,20] This did lead to an increase in admission, nevertheless, there remained a 34% reduction in hospital admissions in 2020. Unfortunately, even with the overall easing of restrictions on the public, the average hospital planned admissions for the following year (2021) still shows an overall 28% reduction in admissions. To date, the total estimated backlog of essential admissions is estimated to be equivalent to the full annual capacity of the Scottish health system.

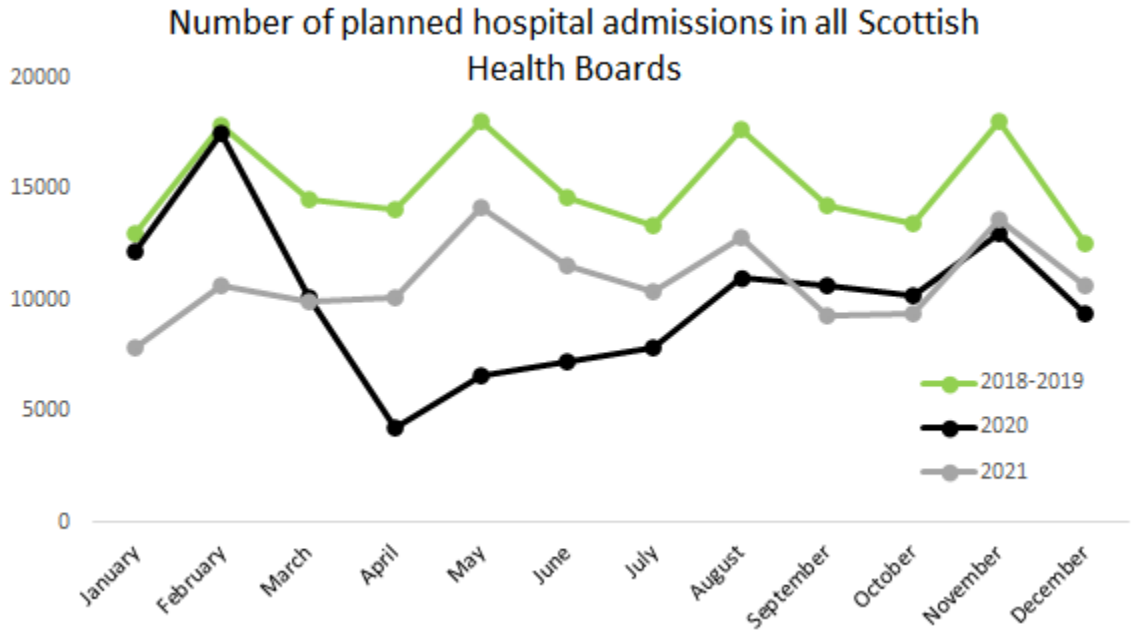


**Figure 3:** Planned hospital admissions across the year in Scotland is plotted for the average number of admissions for 2018 and 2019 in green. Corresponding figures for 2020 and 2021 are plotted in black and grey respectively.

**Discussion**

There are a number of barriers that need to be overcome if those in great need of help are to be provided with access to specialist support. The government messages throughout the pandemic have been to promote isolations, starting from the campaign to stay at home and save the NHS; to avoid socialising; continued working from home and to avoid meeting in groups. Those with mental health problems are often less likely to seek help compared to other patient groups. This reluctance compounded by a strong message of saving the NHS, has resulted in a quarter to a third of those with immediate non-COVID-19 health concerns to avoid contacting their GPs.[19] The most recent data (accessed February 2022) shows that up to 25% of patients avoid contacting their GPs for non-COVID health concerns, a proportion that has remained stable for almost 20 months. Introduction of on-line consulting was an effective tool to improve access to GPs for some. There are however restrictions imposed on general practitioners limiting the degree of complexity and severity of mental illness that can be referred for specialist help. These restrictions are mainly imposed due to capacity limitations caused by COVID-19 related restrictions on secondary care. This reduced capacity is not limited to mental health services but is more widespread as similar data published outlined above shows that planned hospital admissions are around 25-30% below pre-pandemic capacity.[18] Even when patients are referred, it may take years for some to receive specialist care.

There are several mental health charities and organisations that are helping to absorb the effect of mounting demand for mental health care, including Samaritans, Scottish Association for Mental health (SAMH), Breathing Space and Headspace app (NHS) to name a few. Our request for access to the number of cases they assist and an estimate of the rise in demand for their services were not granted, therefore it is not possible to estimate the direct effect of their contribution within the current mental health crisis. It is also the case that due to very long waiting lists, GPs often have to conduct extra monitoring of cases, which is again

providing strain on the already over stretched GP services.

Announcements on the allocation of extra finances to help with mental health initiatives have become regular events. However, the fundamental issues that lead to capacity limitations are typically ignored in media reports. The two-meter social distancing requirement for example, although has long disappeared in public places, still applies to healthcare settings, and drastically reduces the capacity and provision of healthcare. The reconsideration of the requirement for overtly rigorous surface cleaning imposed at the onset of the pandemic, before the airborne nature of transmission was established, is well overdue. Without an overhaul of COVID-19 related restriction in healthcare settings, urgent help for patients will not be forthcoming. This relies on a shift in policy from zero-COVID (or no-COVID) policy for healthcare providers to measures accepting risk of limited transmission. New Zealand had initially been credited with successfully containing COVID-19 surge by their zero-COVID policy. It is important to note that New Zealand was ranked 35th out of 41 OECD countries on child mental health with the second highest suicide rate, in a UN report published September 2020.[21] The zero-COVID policy has likely to have exacerbated their problems. It is important to recognise the human tragedy suffered by patients requiring essential care for each of those thousands of patients represented in figures reported above.

In summary, a zero-COVID policy is costly in patient lives and suffering and its effect extends beyond mental health to both physical health and other health-related concerns. A rethink in the way health services operate is therefore timely and essential to public health.

**Author contributions:** SJC and AS designed the study, analysed data and drafted the manuscript. SJC collected data. This work was conducted as a part of Samantha Cardno's thesis towards an undergraduate degree in Psychology, University of Aberdeen, Scotland.

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Sahraie A, Cardno SJ. Scottish GP Mental Health Referrals 2020. 2021. osf.io/85gxf

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