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The impact of COVID-19 on acute psychiatric admissions for first and repeated episode psychosis

Marlene Kelbrick, Ksenija da Silva, Chris Griffiths, Saba Ansari, Gabriela Paduret, James Tanner, Nick Mann, Sara Johnson

Background

An estimated 26 per 100,000 people develop psychosis every year (pooled incidence rate)(Jongsma et al., 2019). Psychosis is associated with significant interpersonal, social, and occupational functional impairment, the condition often triggered by a combination of psychosocial stressors and environmental factors in the context of genetic vulnerability (Dziwota et al., 2018; Emsley et al., 2013; Iosifescu, 2012; Michalak et al., 2007; Mondelli, 2014; Murray et al., 2020; Stilo & Murray, 2019; van Winkel et al., 2008; Zwicker et al., 2018). Substance use, and in the case of repeated episode psychosis, poor adherence to pharmacological treatment, are also contributing factors (Pelayo-Terán et al., 2017). People with psychosis are also vulnerable to seasonal variation, with evidence of seasonal impact on hospital admission rates (Hinterbuchinger et al., 2020).

COVID-19 infection and fear of its spread, national lockdown and social isolation in often stressful home and family environments, financial and occupational stress, and the consequences on access to and delivery of mental health services all contributed to an increased risk of, not only new onset psychosis, but also risk of relapse in those with existing psychotic disorders (Brahmi, Ammar, Hamdi, et al., 2021; Chatterjee et al., 2020; D'Agostino et al., 2021; Esposito et al., 2021; Kozloff et al., 2020). This was reflected in early impact studies showing an increase in acute psychiatric admissions for psychosis during the initial post-pandemic period (Abbas et al., 2021),(O'Donoghue et al., 2022); with in particular the emerging phenomena of pandemic-related stress-driven brief reactive psychosis(D'Agostino et al., 2021; Valdés-Flórida et al., 2020; Zhand & Joobert, 2021).

Aims

In this study we aimed to: 1) examine whether the phenomenon of increased psychosis admissions had been replicated in our own local area and whether it was more sustained over a longer period post-covid-19; 2) examine the effect of the covid-19 pandemic on both first and repeated episode psychosis and patient profile; and 3) explore whether the seasonal effects in psychosis we normally see were affected by the impact of Covid-19, and what changes were seen in the context of Covid-19.

Method

We conducted a retrospective case-note evaluation of all patients with primary psychosis admitted to an acute psychiatric inpatient unit in Northamptonshire. The study period included the 12 months pre-COVID-19 between 1 March 2019 – 28 February 2020, and 12 months post-COVID-19 between 1 March 2020 – 28 February 2021. Psychosis diagnoses included International Classification of Diseases (ICD) F20-29. Exclusions were other diagnoses such as manic psychosis (F30.2 & F31.2), unipolar depressive psychosis (F33), drug induced (F19) and post-partum psychosis (F53.1).

Demographic, legal, and clinical data collected included age, gender, mental health act use and employment status. Admissions data was analysed by month of the year, in line with previous studies, using the meteorological calendar to examine seasonality and the impact of covid-19 on psychosis admissions.

Data was anonymised. The study was approved by the local Trust Quality Team.

Statistical analysis

Statistical software SPSS version 26 was used for data management and statistical analysis. Categorical (e.g., months/season, employment, MHA detention, gender) and continuous variables (numbers of admissions, age) were compared using descriptive statistics and a Wilcoxon signed-rank test. Statistical significance was determined by an alpha level of 0.05 or lower.

Results

Admission rates

Overall, less patients were admitted to hospital post-COVID-19 (482 v 441).

Acute admission rates for the combined psychosis group (first and repeated episode) were increased post-COVID (109/482; 23% v 148/441; 34%) ($M = 12.33$, $SD = 4.54$ v $M = 9.08$, $SD = 3.18$), the difference close to reaching statistical significance ($Z = -1.81$, $p = .071$). The trend was more pronounced in the first episode psychosis (FEP) group, where the admissions increased from 17/109 (16%) to 26/148 (18%) (1.41 ($SD = .90$) to 2.17 ($SD = 1.47$; $Z = -1.71$, $p = .88$).

Patient characteristics

Gender

There were significantly more females admitted post-COVID-19, increasing from 41/109 (38%) to 64/148 (43%) (3.42 ($SD = 1.00$) to 5.33 ($SD = 1.78$; $Z = -2.57$, $p = .010$); this difference was especially pronounced for the repeated episode group ($Z = 2.02$, $p = .043$) and was reaching significance for the FEP group ($Z = -1.73$, $p = .083$).

Age

Mean age for the combined first and repeated episode psychosis group was 39 years pre-Covid-19 compared to 41 years post-COVID-19. In the FEP group there was little difference in mean age pre- and post-Covid-19 (35 v. 36 years).

Employment

The proportion of people (combined first and repeated episode psychosis group) who were employed increased from 9/109 (8%) pre-COVID-19 to 24/148 (16%) post-COVID-19, reaching statistical significance ($Z = -1.96$, $p = .050$). Of note in the FEP group, the difference in terms of employment appeared particularly pronounced (pre-COVID-19 5/17; 29% v. post-COVID-19 13/26; 50%).

Diagnosis

In the combined first and repeated episode psychosis group, the majority of those admitted pre- and post-COVID-19 had a diagnosis of schizophrenia (53/109; 49% v. 74/148; 50%). Other diagnoses included schizoaffective disorder (30/109; 28% v. 31/148; 21%), acute and transient psychotic disorder (19/109; 17% v. 27/148; 18%), psychosis Not Otherwise Specified (NOS) (6/109; 5% v. 10/148; 7%) and persistent delusional disorder (1/109; 1% v. 6/148; 4%).

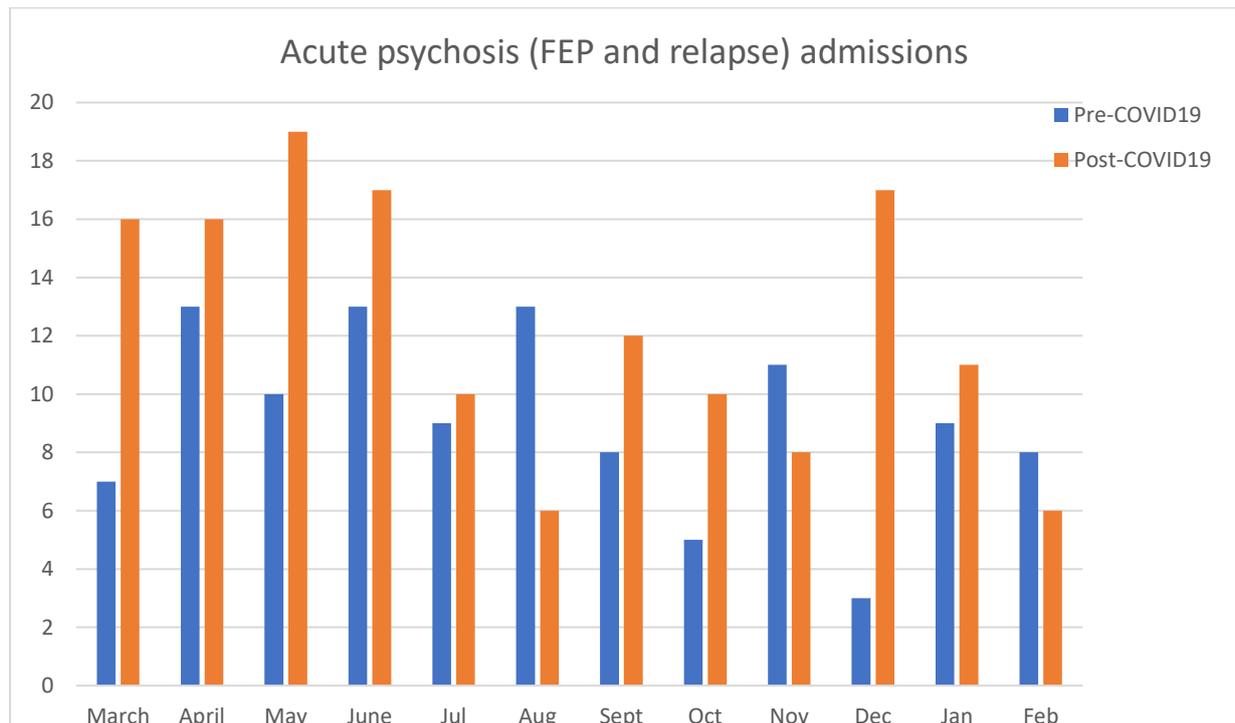
In the FEP group, main diagnosis both pre- and post-COVID-19 was acute & transient psychotic disorder (11/17; 65% v. 19/26; 73%), followed by psychosis NOS (4/17; 23% v. 5/26; 19%), schizophrenia (2/17; 12% v. 1/26; 4%) and persistent delusional disorder (1/26 post-COVID-19; 4%).

Legal status

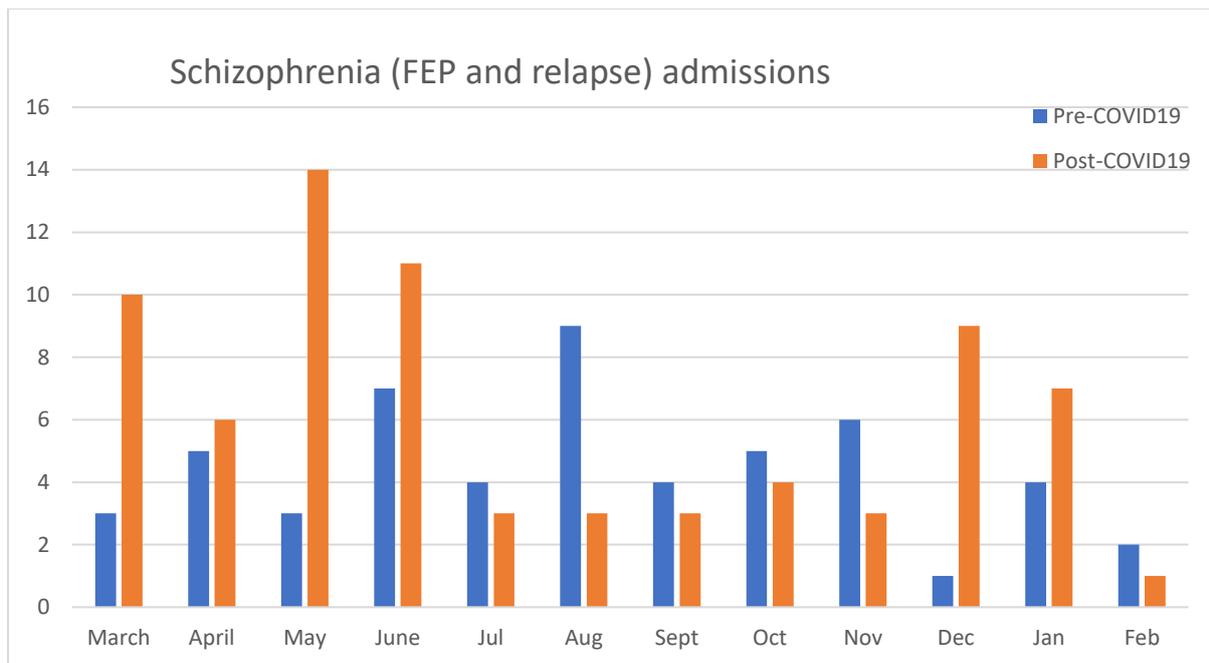
There was no statistically significant difference overall pre- and post-COVID-19 in the number of Mental Health Act (MHA) detentions. Pre-COVID-19, 67/109 (62%) of patients (both first and repeated episode psychosis) were detained under the MHA (1983), compared to 94/148 (64%) post-COVID-19. In the FEP group, 10/17 (59%) compared to 17/26 (65%) were detained under the MHA (1983).

Seasonal pattern changes

There was no statistical difference between pre- and post-COVID-19 seasonal patterns of admissions. However, combined data of both pre- and post-COVID-19 admissions showed an increased trend in spring and summer.



For schizophrenia diagnosis in the combined first and repeated episode psychosis, acute admissions followed a more pronounced trend and earlier peak post-Covid19 compared to pre-Covid19, although not statistically significant.



Discussion

Our study showed an increase in acute psychiatric admissions for first and repeated episode psychosis post-Covid-19, despite a reduction in overall hospital admissions. This is similar to what has been reported in other studies during the initial lockdown period (Abbas et al., 2021; Boldrini et al., 2021; Clerici et al., 2020; Davies & Hogarth, 2021); however, highlighting a more sustained pattern over 12 months. 'Fear of contagion' and adjustments to criteria for admission thresholds to reduce infection spread and balancing reduced staff capacity, have been cited as reasons for overall reductions in psychiatric admissions during the post-Covid19 period (Boldrini et al., 2021; Dionisie et al., 2022).

Patients admitted with acute psychosis post-Covid-19 were more likely to be female and older, and in the FEP group particularly, in addition to a female preponderance, more likely to be employed, with a modest increased rate of detention under the MHA (1983) in this group. A study by Casanovas et al (2022) (Casanovas et al., 2022) identified female as having been a significant variable associated with an increased risk of FEP during the pandemic, with similar findings by Esposito and colleagues (2021) (Esposito et al., 2021). Several studies have highlighted the disproportionate impact of pandemic-related stressors on females, with females associated with higher self-reported stress, anxiety and depression symptoms, and more severe impact of psychological stress, as well as increased 'care-giver burden' (Almeida et al., 2020; Connor et al., 2020; Power, 2020).

The main diagnosis in repeated episode psychosis was that of schizophrenia, compared to acute & transient psychosis in the FEP group. This is consistent with findings from case reports during the pandemic, and supported by a multicentre observational study, of increased rates of brief reactive psychosis (Valdés-Florido et al., 2022), and relapse of existing psychotic illness driven by pandemic related stress as a major contributory factor (Bassiony et al., 2022). Pandemic-related changes in access to and provision of community mental health services as well as treatment and other therapeutic interventions, were also likely contributing factors, in particular repeated episode psychosis (Brahmi, Ammar, Khelifa, et al., 2021; Jagadheesan et al., 2021).

The influence of seasonality in patterns of admissions have previously been highlighted in schizophrenia, with most studies showing peak summer admission rates (Hinterbuchinger et al., 2020; Jahan et al., 2020; Törmälehto et al., 2022), one study finding this phenomenon mainly in

females (Takei et al., 1992), and another suggesting seasonality more relevant for first episode compared to repeated episode schizophrenia (Clarke et al., 1999). Little is known with regards to combined first and repeated episode psychosis (with a heterogeneous psychosis group diagnostically) and seasonality. Of interest, is that our combined group data for both pre- and post-Covid19 periods showed an increased trend in spring and summer admissions, and even though not statistically significant, more pronounced post-Covid19. When broken down into diagnostic category, for combined first and repeated episode schizophrenia, our study showed a more pronounced spring and early summer trend post-covid19, compared to pre-covid19 later summer peak.

Limitations of the study include overall a small sample size and therefore results should be interpreted with caution. However, the study represents all admissions for psychosis (F20-29 diagnostic category) to a typical NHS acute psychiatric inpatient unit during a 12-month period pre- and post-Covid19. Diagnostic heterogeneity within the psychosis group is a limiting factor. Confounding factors such as the presence of Covid 19 infection and substance misuse that may contribute as triggers for psychosis have not been examined.

Conclusion

Our study showed increased acute admissions for both FEP and repeated episode psychosis during the post-Covid19 pandemic period. The pandemic-related impact on number of admissions, patient profile, and seasonal patterns, highlighted the 'stress-pathogenesis' in the context of genetic vulnerability in psychosis (Esposito et al., 2021). This evidence supporting the 'stress-pathogenesis' model highlights the need for preventative strategies, and improved access to and responsiveness of services within the NHS England's Integrated Care Systems (ICS's) transformation, adjusted to fit local need and environmental changes. (NHS England, 2019).

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