Impact of the COVID-19 Pandemic on the Healthcare Resource Use of People with Newly Diagnosed Mood/Affective Disorder

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Background

Recent studies suggests an impact of the COVID-19 pandemic on mental health in Germany and worldwide, with an increase of the global prevalence of depression and anxiety of 25% in the first year of the pandemic.[1,2] While social isolation during lock-down measures lead to increased psychological distress, health services were disrupted.[2] In this study, we investigated the impact of the COVID-19 pandemic on the healthcare resource use (HCRU) among patients newly-diagnosed with mood/affective disorders in Germany.

Methods

Adults with ≥1 inpatient/outpatient diagnosis of a mood/affective disorder (ICD-10-GM F30-F39) between 01/01/2018 and 31/12/2020 were identified from a regional German claims dataset (AOK PLUS). The first diagnosis was defined as the index date. An 18-month washout period was applied to ensure incidence of the diagnosis and patients needed to be continuously insured from 18 months prior to their index date until 6 months post index. HCRU outcomes were observed during a 6-month follow-up period. Patients were broken down into two cohorts based on whether their follow-up period fell into the pre-COVID or COVID era (cut-off 01/04/2020); patients with a follow-up period touching both the pre-COVID and COVID era were excluded. Baseline characteristics and HCRU outcomes were reported using descriptive statistics; continuous HCRU outcomes were adjusted for the available follow-up time (in case of death prior to end of observation). Variables were compared using appropriate tests (Student's t-test/Welch's test for continuous variables and chi-squared test for binary variables).

Results

CHARACTERISTICS

A total of 132,103 patients were identified (pre-COVID: 97,189, COVID: 34,914; see **Figure 1** for cohort selection details). While the mean age and Charlson Comorbidity Index (CCI) were similar in both groups, the proportion of females was lower in the COVID cohort (62.5% vs. 63.4%, p = 0.002; **Table 1**). Depressive episodes made up the vast majority of initial diagnoses with affective disorders (81.5% F32.- *Depressive episode*, 12.8% F33.- *Recurrent depressive disorder*).

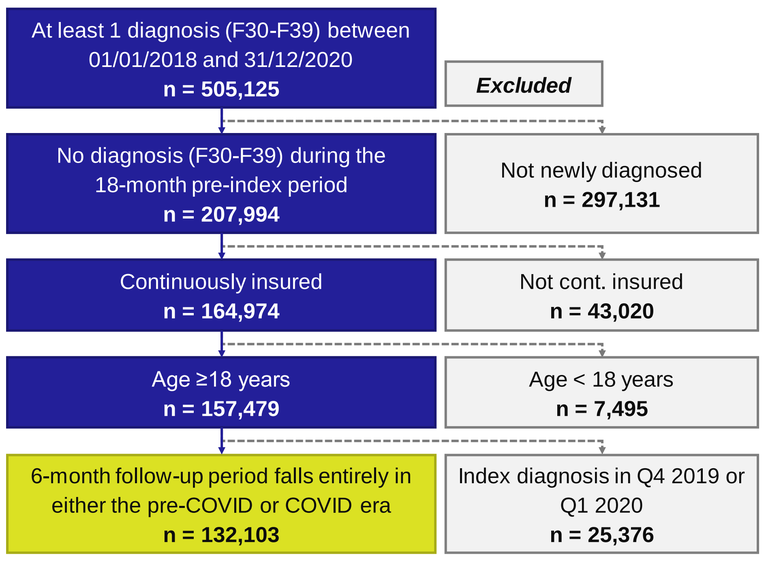

Figure 1: Attrition chart.

ABSENCES

While the percentage of patients with at least 1 *all-cause* sick leave period and the number of *all-cause* sick leaves was significantly lower among those whose follow-up fell into the COVID period (35.7% vs. 37.0%, p < 0.001; 0.68 vs. 0.76, p < 0.001; **Table 1**), the *diagnosis-related* absence rates and number of sick leave periods were similar in both groups (19.8% vs. 20.0%, p = 0.511; 0.23 vs. 0.23, p = 0.738). Notably, the number of days absent from work in relation to a diagnosis of a mood/affective disorder was significantly higher in the group with follow-up during COVID (11.44 vs. 10.68, p = 0.001).

HOSPITALIZATIONS

The share of patients with all-cause hospitalizations during the 6-month follow-up was smaller among those whose follow-up fell into the COVID period (27.7% vs. 31.2%, p < 0.001), and the average number of all-cause admissions and hospital days was significantly lower in the COVID cohort (0.47 vs. 0.54, p < 0.001; 7.55 vs. 8.63 days, p < 0.001). The same held true for the hospitalization rate, number, and days considering inpatient stays which were related to mood/affective disorders (**Table 1**). Notably, the hospitalization rate and number of hospital days were particularly low for patients diagnosed in Q4 2020 (all-cause: 24.9%, 7.00 days; diagnosis-related: 12.9%, 4.53 days, **Figure 2**).

OUTPATIENT VISITS

While hospitalizations generally decreased during COVID, the average number of outpatient visits relating to a mood/affective disorder during the follow-up was slightly, but significantly, higher in the COVID group (1.80 vs. 1.75, p < 0.001; **Table 1**).

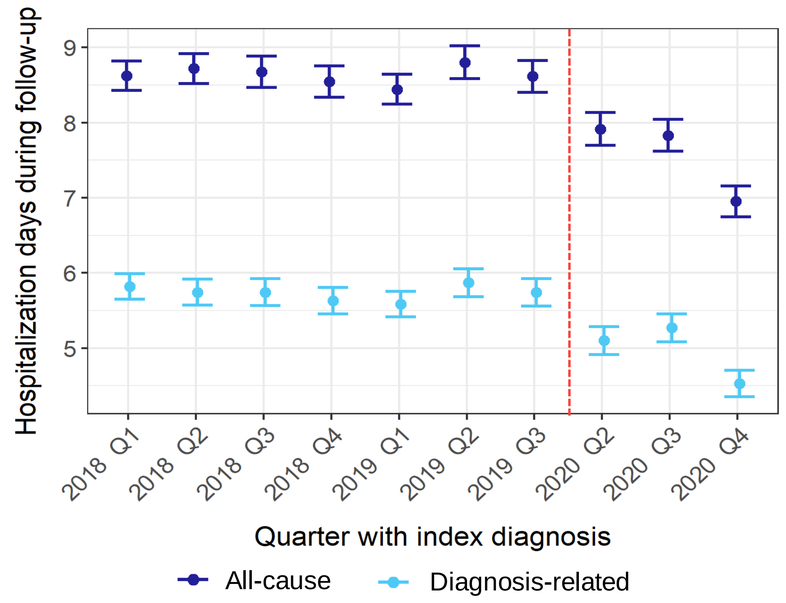

Figure 2: Hospitalization days during the follow-up period stratified by index quarter. Note that the quarter refers to the time of incident diagnosis and the respective follow-up period stretches over the 6 months following diagnosis.

Table 1: Baseline characteristics and HCRU outcomes separately per cohort. Outcomes are reported for a 6-month follow-up period and adjusted for the available follow-up time, where applicable.

	Characteristic/Outcome	Pre-COVID (n = 97,189)	COVID (n = 34,914)	*p*-value
Charac-teristics	Age – mean (SD)	54.07 (20.44)	54.12 (20.57)	0.722
	Sex – n (%)	61,639 (63.42%)	21,823 (62.51%)	0.002
	CCI – mean (SD)	1.72 (2.59)	1.74 (2.61)	0.161
Hospitalizations	At least 1 hospitalization, all-cause – n (%)	30,284 (31.16%)	9,668 (27.69%)	<0.001
	At least 1 hospitalization, disease-related – n (%)	16,588 (17.06%)	5,152 (14.76%)	<0.001
	Number of hospitalizations, all-cause – IR (95% CI)	0.54 (0.54-0.55)	0.47 (0.46-0.48)	<0.001
	Number of hospitalizations, disease-related – IR (95% CI)	0.23 (0.23-0.23)	0.20 (0.19-0.20)	<0.001
	Inpatient days, all-cause (mean, SD)	8.63 (24.18)	7.55 (22.88)	<0.001
	Inpatient days, disease-related (mean, SD)	5.73 (20.80)	4.96 (19.51)	<0.001
Absences	At least 1 leave of absence, all-cause – n (%)	35,927 (36.97%)	12,459 (35.68%)	<0.001
	At least 1 leave of absence, disease-related – n (%)	19,438 (20.00%)	6,925 (19.83%)	0.511
	Number of absences, all-cause – IR (95% CI)	0.76 (0.75-0.77)	0.68 (0.66-0.69)	<0.001
	Number of absences, disease-related – IR (95% CI)	0.23 (0.23-0.23)	0.23 (0.22-0.23)	0.738
	Days absent from work, all-cause (mean, SD)	17.56 (40.50)	18.06 (41.87)	0.055
	Days absent from work, disease-related (mean, SD)	10.68 (34.73)	11.44 (36.40)	0.001
Out-pat. visits	At least 1 outpatient visit, disease-related – n (%)	88,598 (91.16%)	32,393 (92.49%)	<0.001
	Number of outpatient visits, disease-related – IR (95% CI)	1.75 (1.74-1.76)	1.80 (1.79-1.81)	<0.001

CCI, Charlson Comorbidity Index; CI, confidence interval; IR, incidence rate; SD, standard deviation

Conclusions and Limitations

DISCUSSION & CONCLUSION

- People newly diagnosed with affective disorders experienced less inpatient care during the COVID pandemic. This is in line with observations made among the general population,[3] and may be explained by the measures taken in Germany to minimize the non-COVID-related inpatient admissions.[4]
- While the number of sick leave periods slightly decreased during COVID, the total number of absent days showed an increasing trend among persons with incident affective disorders. This is in line with other reports of absences in Germany, which also highlight an increasing proportion of absent days due to depression among the general population during recent years.[5,6]
- The HCRU of people newly-diagnosed with affective disorders has shifted during the COVID-19 pandemic. Further research is needed to assess the impact of the observed shift on disease severity and long-term outcomes.

LIMITATIONS

- For the sake of comparison, only patients with a follow-up period which fell entirely in the defined pre-COVID or COVID periods were included in the analysis, leaving out those initially diagnosed in Q4 2019 and Q1 2020.
- As the AOK PLUS insures about 3.4 million persons in the regions of Saxony/Thuringia and there are regional differences in the incidence of COVID-19, the results of our study may not be applicable for a representative statement about the whole of Germany.

Disclosure & Acknowledgment

SJ, RK and FH are employees of Cytel Inc. and have no conflicts of interest to declare. PH participated in this study as a member of IPAM e.V. and has nothing to declare. UM works for a statutory insurance fund (AOK PLUS), which provided the data used in this study.

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