

COVID-19 impact on mental health with a specific focus on the access to and consumption of mental health care services in Romania

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Executive summary

The expected consequences of COVID-19 on the mental health of the population were linked both directly to the psychological stress resulting from the virus's impact on physical health and indirectly to the measures implemented to control its spread. These measures had adverse effects on the financial stability of various professional sectors and limited access to different healthcare services, which was anticipated to potentially affect the overall health status of the population. Over the past three years, there has been extensive scrutiny of the subject, often yielding conflicting outcomes.

Our study aimed to investigate the impact of COVID-19 on mental health in Romanian population, focusing on mental health care services utilization during COVID-19 pandemic years 2020-2022 in comparison to pre-pandemic years 2018-2019.

An important limitation of our study was the impossibility to retrieve data stratified by sex and age, but only on adult, children and adolescents, and also the exclusive focus on mental health hospitalizations for major psychiatric disorders diagnosed according to the International Statistical Classification of Diseases and Related Health Problems 10th Revision (ICD-10). However, even if our data were not in the same format with the data provided by other European countries, our results confirmed in an independent way, the same results on the overall effect of COVID-19 on major psychiatric disorders and even a decrease in the number of hospitalizations for depression in general. Nevertheless, our investigation revealed that the frequency of hospitalizations for disorders more reactive to psycho-social environment increased in both adults and children and adolescents during COVID-19 pandemic compared to the pre-pandemic years.

Our research underscores the significance of giving priority to the assessment of psycho-social impacts on specific groups and tailoring containment interventions to effectively prevent adverse mental health consequences among vulnerable populations.

Introduction

The COVID-19 pandemic has had a profound impact on various facets of life, directly impacting a staggering number of over 767 million individuals (SARS-CoV-2 confirmed cases) and causing loss of over 6.9 million lives [WHO Coronavirus (COVID-19) Dashboard, 2023]. However, its repercussions have reverberated directly or indirectly throughout communities and societies, disrupting them in numerous ways.

The expected consequences of COVID-19 on the mental health of the population were linked both directly to the psychological stress resulting from the virus's impact on physical health and indirectly to the measures implemented to control its spread. These measures had adverse effects on the financial stability of various professional sectors and limited access to different healthcare services, which was anticipated to potentially affect the overall health status of the population.

The effects of the COVID-19 pandemic on mental health have been frequently analyzed over the past three years, but the results have often been contradictory. Some investigators found a significant decrease in subjective well-being during COVID-19 pandemic (Reyes- Molina et al., 2022); other found an increase in anxiety, in suicidal behavior during COVID-19 pandemic (reviewed by Barberis N et al., 2022), particularly, an increase in general depression symptoms and clinically relevant depression rates for European children and adolescents (reviewed by Ludwig-Walz H, 2022); while Verma et al., 2023 found no increase in suicide during the pandemic.

Our study aimed to investigate the impact of COVID-19 on mental health in Romanian population, focusing on mental health care services utilization during COVID-19 pandemic years 2020-2022 in comparison to pre-pandemic years 2018-2019.

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As the PERISCOPE project aims to learn the direct and indirect impacts of COVID-19 and to generate sustainable policies, we tried to provide evidence that could aid policymakers in formulating evidence-based interventions to effectively prevent adverse mental health consequences and appropriately be adapted for protection of possible vulnerable groups of people.

Access to and consumption of mental health services during the pandemic years 2020-2022 compared to the pre-pandemic years 2018-2019 in Romania

Even from the beginning of COVID-19 pandemics it was clear that the restrictions intended to limit the spreading of SARS-CoV-2, and later on, in 2021, the introduction of the vaccination certificate, negatively influenced the access of the population to all types of medical services including mental health services.

In 2021, the authorities continued to impose circulation restrictions all over the country and the introduction of the vaccination certificate at 1st of July 2021 created a particular type of discrimination between vaccinated and not-vaccinated individuals. The restrictions discouraged the access to inpatient and outpatient medical services and to other public services

like access to banks, police, shopping centers, cultural institutions, and moved the teaching process online both in schools and universities. Moreover, the fear of the population of getting infected determined a reduced addressability to medical services. The maintenance of the restrictions intended to limit the spreading of COVID-19 and the maintenance of the vaccination certificate in the first half of the year 2022 in hospitals, in spite of the official relaxation of the restrictions in March 2022 might have influenced the access of the population to all types of medical services including mental health services also in 2022.

Method:

We analyzed cross-sectional statistical data regarding the number of hospitalizations for major psychiatric disorders diagnosed according to the International Statistical Classification of Diseases and Related Health Problems 10th Revision (ICD-10) criteria in adults, adolescents, and children admitted at the Prof. Al. Obregia Psychiatry Clinical Hospital in Bucharest during: COVID-19 pandemic period 2020 - 2021 – 2022 versus pre-pandemic period 2018 - 2019.

Prof. Al. Obregia Psychiatry Clinical Hospital in Bucharest, treats patients from Bucharest, its outskirts and surrounding counties representing about 5,000,000 inhabitants.

Data accessibility was limited, and due to the unavailability of an organized Romanian mental health register we could retrieve data in a different format than the data provided by other European countries. However, the stratification on the groups of adults, adolescent and children was possible.

The number of hospitalizations for main psychiatric disorders diagnosed according to ICD-10 criteria in adult, children and adolescent patients were compared by year.

The analyzed data represent illness episodes, not individuals. Therefore, the data do not represent either illness incidence or prevalence.

Results

The total number of hospitalizations for major psychoses (schizophrenia, bipolar disorder, major depressive disorder, and schizoaffective disorders) did not change during the pandemic period 2020-2021 compared to the pre-pandemic period 2018-2019 (Table 1):

Table 1. Total number of hospitalizations for any psychiatric disorders in the Obregia University Hospital in the pandemic years 2020-2022 compared by year to the pre-pandemic years 2018-2019

	Year				
	2018	2019	2020	2021	2022
Total hospitalisation number (Adults)	14147	21646	12667	12155	13718
Total hospitalisation number (children and adolescents)	1505	1912	938	1083	1649

*Reference population: Bucharest and surroundings ~ 5,000,000 individuals.

Comparing pandemic years 2020-2022 to the pre-pandemic years, a significant decrease of the total number of hospitalizations in adults and children and adolescents had been observed. These results might be explained by administrative restrictions meant to decrease infection spread and also by the fear of the population of getting infected in closed spaces. Decrease in adults' hospitalizations was more than 50% if compare pandemic years to year 2019, but there was a much smaller reduction when compared to 2018. Nevertheless, most probably due to the relaxation of restrictions after March 2022, an increase of 11.39% was recorded in 2022 compared to 2021.

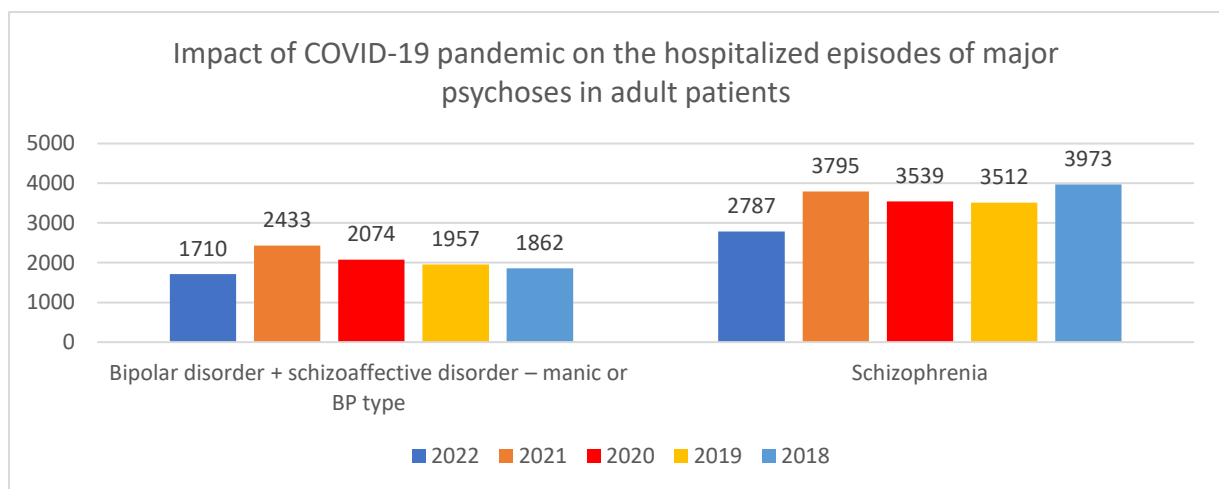
In children and adolescents there is the same significant decrease in the years 2020 and 2021 compared to 2019, but there is no difference between the year 2022 and 2018.

Impact of pandemic on the hospitalized episodes of major psychoses in adult patients in the Obregia University Hospital in the pandemic years 2020-2022 compared to the pre-pandemic years (Figure 1) showed almost similar values, with differences that might represent normal variations on hospitalizations.

The hospitalization numbers for **schizophrenia and schizophrenia spectrum disorders** slightly increased in 2021 compared to 2020 (7.04%) and to 2019 (7.75%), but did not differ

from the year 2018. In 2022, the number of hospitalizations decreased with 10.65% compared to 2019.

Figure 1. Hospitalizations for major psychoses (schizophrenia, bipolar disorder, major depressive disorder, and schizoaffective disorders) during 2018 – 2022.



The explanation for these slight oscillations is the annual variation during 2020 -2021, might be the severity of the major psychoses with a strong genetic component and with potentially dangerous effects, both for the patient and its social environment, which motivate the families and the emergency authorities to access hospital indifferent the existent conditions.

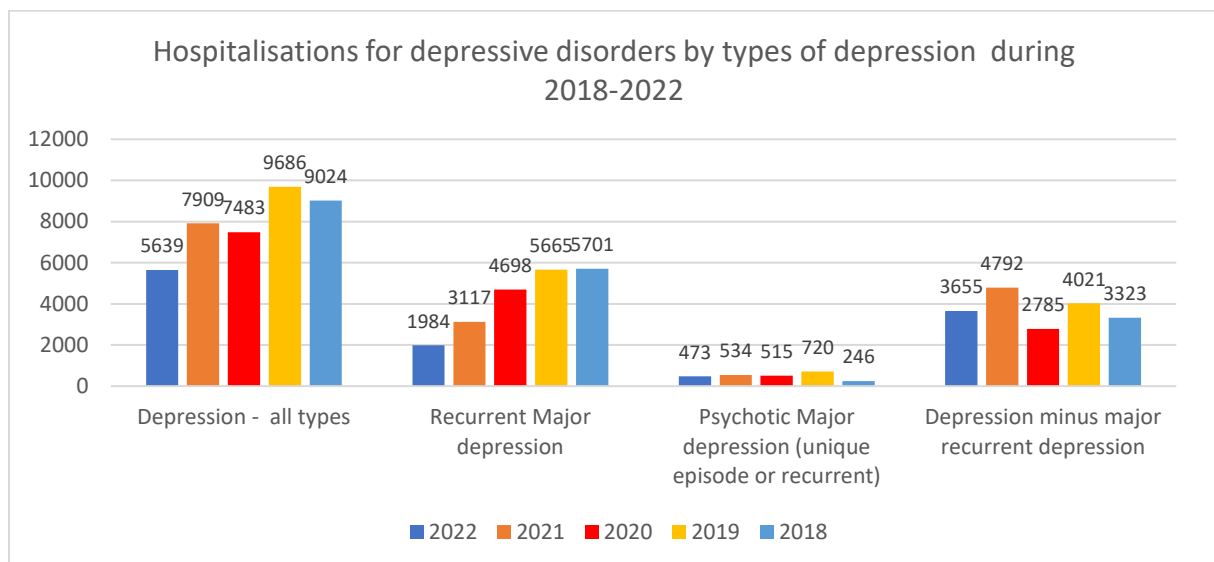
Hospitalization for **depression in general (all types)** showed a continuously decreased during 2019 – 2022 explanation might be that the symptoms of depression are considered less dangerous for the individual's health for being addressed to psychiatric hospital and better tolerated by the patient and family. On the other hand, a persisting fear of getting infected in a hospital, and the reduction of the social stress in 2022 contributed to the reduction of the hospitalization number. (Figure 2).

When we analyzed **depressive disorders by types of depression**, due to their higher heterogeneity in pathogenesis and sensitivity to environmental influence, hospitalizations for

recurrent major depression (that have a significant genetic determinism), showed a significant decrease during the pandemic, compared to the pre-pandemic period.

The recurrent major depression including psychotic and non-psychotic type was significantly less frequently hospitalized in pandemic years most probably due to the fear of getting infected with COVID-19 in the hospital but also due to the natural annual variation of the incidence of illness episodes.

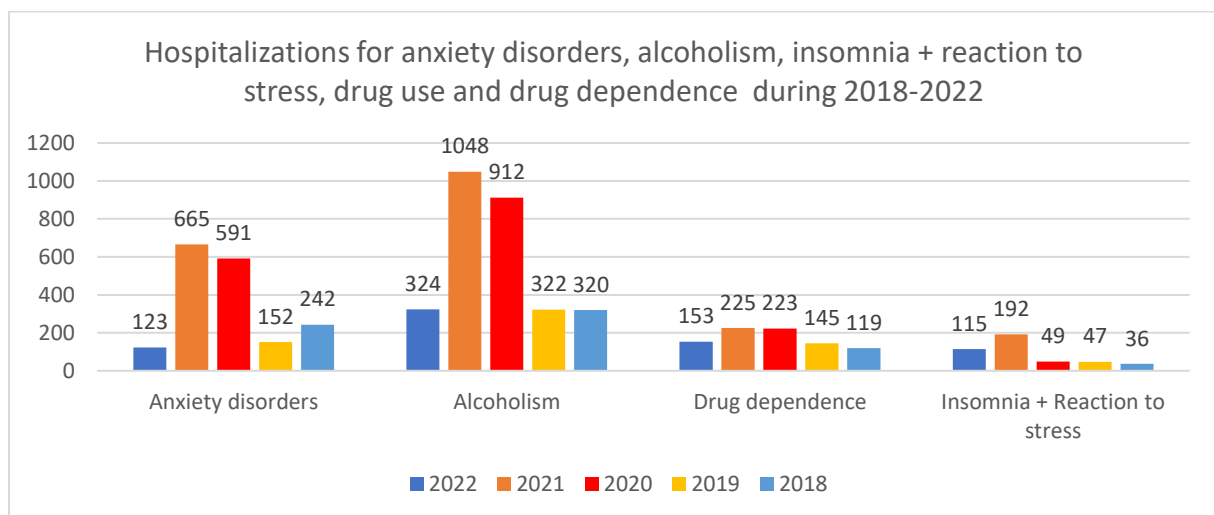
Figure 2. Hospitalizations for depressive disorders by types of depression in the years 2020-2022 compared to the years 2019 and 2018.



In 2022 the total number of hospitalizations for all types of depression significantly decreased (41.78% compared to 2019) due to the decrease of non-major depression (column “depression minus major recurrent depression”) which indicates a lower social stress level for the population in the year 2022 after relaxation of the restrictions, but also persisting fear to be hospitalized. The hospitalization number for the recurrent major depression, that has an important genetic liability, does not differ in 2022 from the year 2021, although it was significantly lower compared to the pre-pandemic years 2019 and 2018. Thus, we may state that the pandemics has negatively influenced the access to hospital of true depressive patients. When comparing the total period 2020-2022 to the years 2018-2019 we may also have observed that the annual variations in disease incidence and episode severity have influenced the addressability to hospital.

The number of hospitalizations for **anxiety, alcoholism, insomnia, and reactions to stress** in adults, increased by approximately four times during the pandemic years 2020-2021 and decreased considerably in 2022, most likely due to the socio-economic component playing a more important role in these disorders (**Figure 3**). Drug use and drug dependence in adult patients was only slightly modified during these years.

Figure 3. Hospitalizations for anxiety disorders, alcoholism, insomnia and reaction to stress, drug use and drug dependence in adult patients.



The explanation for the increased hospitalizations for anxiety disorders, alcoholism, insomnia and reaction to stress might be linked to the economic and social disturbances generated by the COVID-19 pandemic.

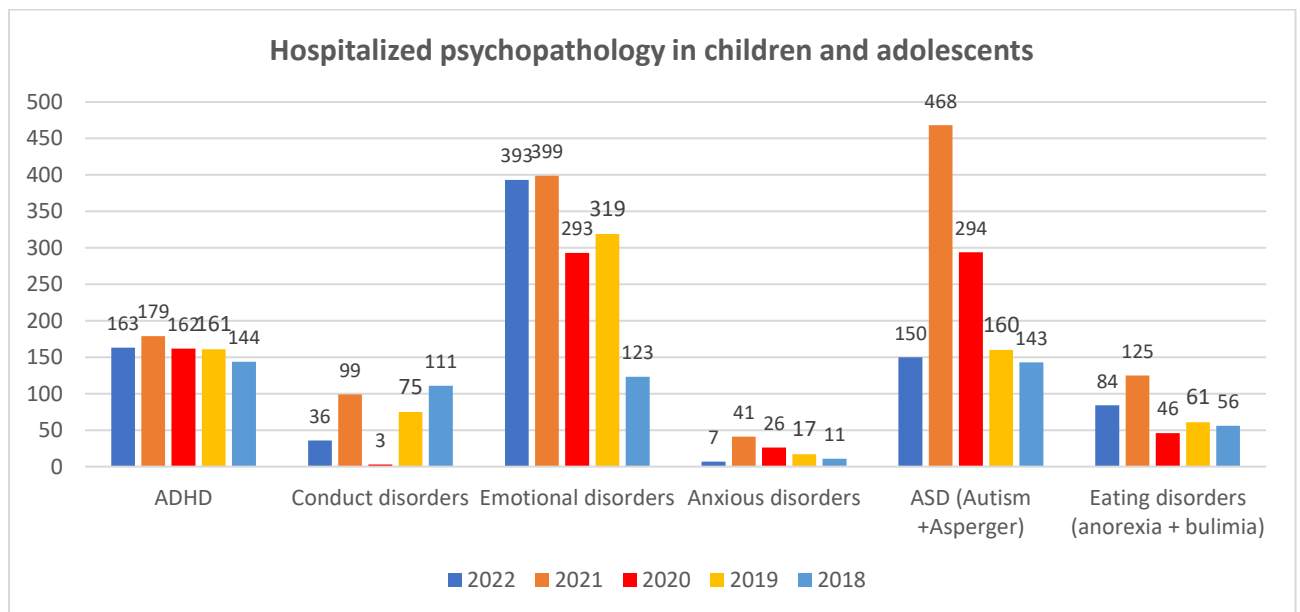
The general observation is that in the years 2020 – 2021 all disorders with strong environmental component have increased compared to the pre-pandemic years 2018-2019 and decreased when the socio-economic stress and restrictions were relaxed after March 2022.

Hospitalized psycho-pathologies in children and adolescents as: attention deficit with hyperactivity (ADHD), conduct disorders, emotional disorders, autism spectrum disorders (ASD) including Asperger syndrome, eating disorders (anorexia nervosa and bulimia) were analyzed in correlation with the containment measures.

In 2022, the hospitalizations for several disorders in children and adolescents decreased (anxious disorders, autism spectrum disorders; eating disorders) compared to 2021. Hospitalizations for ADHD and conduct disorders were not affected by the COVID-19 restrictions or relaxations showing very similar rates over 5 years.

Instead, an increased hospitalization number was observed for all other analyzed disorders: emotional disorders, anxious disorders, ASD, eating disorders compared to the pre-pandemic years. Hospitalizations for emotional disorders, eating disorders, anxiety, and autism spectrum disorders increased threefold in 2021 comparing to pre-pandemic years. Showing the impact of closing outpatient services for autistic children during 2020 - 2021 and also the effect of normalizing of the activity within specialized centers that employ various strategies and interventions to support and promote social interaction for the children with ASD (2022).

Figure 4. Hospitalized psychopathology in children and adolescents in the years 2020-2022 compared to the years 2019 and 2018.



Conclusions and key messages

1. The COVID-19 pandemic did not have a significant impact on major psychiatric disorders with a significant genetic component.

2. The decrease in the number of hospitalizations for depression in general, in 2020-2021, might be explained by restricted access to hospitals and by the population psychological reaction of fear of contagion.
3. There was no impact of the COVID-19 pandemic on the hospitalizations for major psychoses (bipolar disorder, schizoaffective disorder manic or BP type, schizophrenia and schizophrenia spectrum) due to their clinical severity and genetic determinism, as well as to the annual variations of the illness episodes. The hospitalization rates were similar to the pre-pandemic years.
4. The pandemic has negatively influenced the access to treatment of severe depressive patients (patients with recurrent major depression (that has a strong genetic component), but has not increased the depressive reactions (that have a strong environmental component) in the general population.
5. Hospitalizations for all disorders with strong environmental component (anxiety disorders, alcoholism, insomnia and reaction to stress) increased in the pandemic years 2020 - 2022 compared to the pre-pandemic years 2018-2019 and decreased when the socio-economic stress and restrictions were relaxed after March 2022.
6. In children and adolescents there was no significant difference for the hospitalizations for ADHD and conduct disorders compared to the pre-pandemic years 2019 and 2018. Instead an increased hospitalization number was observed for all other analyzed disorders (emotional disorders, anxious disorders, ASD, eating disorders) in the pandemic years compared with the pre-pandemic years. Increased hospitalizations for these disorders correlated with closing of schools and outpatient services, as well as the social isolation and lack of interaction with peers generated by restrictions during the COVID-19 pandemic.

Even if our data were not in the same format with the data provided by other European countries, our results confirmed in an independent way, the same results on the overall effect of COVID-19 on major psychiatric disorders and even a decrease in the number of hospitalizations for depression in general. Nevertheless, our investigation revealed that the frequency of hospitalizations for disorders more reactive to psycho-social environment increased in both adults and children and adolescents during COVID-19 pandemic compared to the pre-pandemic years.

Since the only containment measures that seems to have a more important effect was the school restrictions and outpatient services closure, it will be important to balance these containment measures

by intensifying procedures aimed at enhancing social interaction and fostering connections between individuals. At the same time, will be important to identify population groups that are more susceptible to experience negative mental health outcomes, based on evidence, and provide targeted support and interventions to meet their specific needs.

Our research underscores the significance of giving priority to the assessment of psycho-social impacts on specific groups and tailoring containment interventions to effectively prevent adverse mental health consequences among vulnerable populations.

Sources

Barberis N, Cannavò M, Cuzzocrea F, Verrastro V. Suicidal Behaviours During Covid-19 Pandemic: A Review. Clin Neuropsychiatry. 2022 Apr;19(2):84-96. doi: 10.36131/cnforiteditore20220202.

Ludwig-Walz H, Dannheim I, Pfadenhauer LM, Fegert JM, Bujard M. Increase of depression among children and adolescents after the onset of the COVID-19 pandemic in Europe: a systematic review and meta-analysis. Child Adolesc Psychiatry Ment Health. 2022;16(1):109.

Reyes- Molina et al., Association between the Physical Activity Behavioral Profile and Sedentary Time with Subjective Well-Being and Mental Health in Chilean University Students during the COVID-19 Pandemic. Int J Environ Res Public Health. 2022 19(4):2107. doi: 10.3390/ijerph19042107 2022.

Verma et al. Suicide hangings during pre-Covid-19 and Covid-19 – Myths debunked for the lower-middle-income group countries, Asian Journal of Psychiatry 79 (2023) 103349.

WHO Coronavirus (COVID-19) Dashboard, available at <https://covid19.who.int/>

Appendix

ICD-10 codes included in computations:

- Schizophrenia: F20.0; F20.1; F20.2; F20.3; F20.5; F20.6; F20.8; F20.9; F21; F23.1; F23.2 .
- Schizophrenia 2022: F20.0; F20.1; F20.2; F20.3; F20.4; F20.5; F20.6; F20.8; F20.9; F21; F22.0; F22.8; F22.9; F23.1; F23.2; F23.3; F23.8
- Bipolar disorder and schizo-affective disorders manic, mixed, BP type: F30.0; F30.1; F30.2; F30.8; F30.9; F31.0; F31.1; F31.2; F31.3; F31.4; F31.5; F31.6 ; F31.7 ; F31.8 ; F31.9; F34.0; F25.0; F25.2; F25.8; F25.9 .
- Depressive disorders: F32.11; F32.00; F32.30; F32.31; F32.20; F32.21; F32.01; F32.80; F32.81; F32.10; F32.90; F32.91; F33.0; F33.1; F33.2; F33.3; F33.4; F33.9; F34.1.

- Anxious disorders (adults): F40.1; F40.2; F40.8; F41.0; F41.1; F41.2; F41.3; F41.8; F41.9; F43.0; F43.1; F40.01; F41.8 .
- Alcoholism: F10.0; F10.1; F10.2; F10.3; F10.4; F10.5; F10.6; F10.7; F10.8; F10.
- Drug dependence and abuse: F11.0; F11.2; F11.3; F11.6; F12.0; F12.1; F12.2; F12.5; F12.8; F13.0; F13.2; F13.3; F17.2; F19.0; F19.1; F19.2; F19.3; F19.5; F19.7.
- Insomnia and reaction to stress: F43.0 F43.8; F43.9; F51.0; F51.9; G47.9 ; F43.0; F43.9

Children and adolescents:

- ADHD: F90.1; F90.8; F90.9; R46.3.
- Anxious disorders: F93.0; F93.1; F93.2
- Emotional disorders: F93.8; F98.8; F93.9; F98.9
- Eating disorders: F50.0; F50.1; F50.3; F50.2.
- Conduct disorders: F91.0; F91.1; F91.2; F91.3; F91.8; F91.9
- Autism spectrum disorders: F84.0; F84.5