



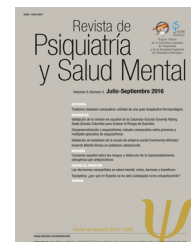
Since January 2020 Elsevier has created a COVID-19 resource centre with free information in English and Mandarin on the novel coronavirus COVID-19. The COVID-19 resource centre is hosted on Elsevier Connect, the company's public news and information website.

Elsevier hereby grants permission to make all its COVID-19-related research that is available on the COVID-19 resource centre - including this research content - immediately available in PubMed Central and other publicly funded repositories, such as the WHO COVID database with rights for unrestricted research re-use and analyses in any form or by any means with acknowledgement of the original source. These permissions are granted for free by Elsevier for as long as the COVID-19 resource centre remains active.



Revista de Psiquiatría y Salud Mental

www.elsevier.es/saludmental



BRIEF REPORT

Reactive psychoses in the context of the COVID-19 pandemic: Clinical perspectives from a case series



María José Valdés-Florido^{a,1}, Álvaro López-Díaz^{a,b,*},
Fernanda Jazmín Palermo-Zeballos^a, Iván Martínez-Molina^c,
Victoria Eugenia Martín-Gil^c, Benedicto Crespo-Facorro^{c,d,e}, Miguel Ruiz-Veguilla^{c,d,e}

^a UGC Salud Mental, Hospital Universitario Virgen Macarena, Seville, Spain

^b Instituto de Biomedicina de Sevilla (IBiS), Seville, Spain

^c UGC Salud Mental, Hospital Universitario Virgen del Rocío, Seville, Spain

^d Centro Investigación Biomédica en Red Salud Mental (CIBERSAM), Spain

^e Departamento de Psiquiatría, Universidad de Sevilla, Seville, Spain

Received 12 April 2020; accepted 22 April 2020

Available online 27 April 2020

KEYWORDS

COVID-19;
SARS-CoV-2;
Coronavirus;
Psychotic disorders;
Suicide

Abstract

Introduction: The world is currently undergoing an extremely stressful scenario due to the COVID-19 pandemic. This unexpected and dramatic situation could increase the incidence of mental health problems, among them, psychotic disorders. The aim of this paper was to describe a case series of brief reactive psychosis due to the psychological distress from the current coronavirus pandemic.

Materials and methods: We report on a case series including all the patients with reactive psychoses in the context of the COVID-19 crisis who were admitted to the Virgen del Rocío and Virgen Macarena University Hospitals (Seville, Spain) during the first two weeks of compulsory nationwide quarantine.

Results: In that short period, four patients met the Diagnostic and Statistical Manual of Mental Disorders (DSM-5) criteria for a brief reactive psychotic disorder. All of the episodes were directly triggered by stress derived from the COVID-19 pandemic and half of the patients presented severe suicidal behavior at admission.

Conclusions: We may now be witnessing an increasing number of brief reactive psychotic disorders as a result of the COVID-19 pandemic. This type of psychosis has a high risk of suicidal behavior and, although short-lived, has a high rate of psychotic recurrence and low diagnostic stability over time. Therefore, we advocate close monitoring in both the acute phase and long-term follow-up of these patients.

© 2020 SEP y SEP. Published by Elsevier España, S.L.U. All rights reserved.

* Corresponding author.

E-mail address: alvaro.lopez.diaz.sspa@juntadeandalucia.es (Á. López-Díaz).

¹ Joint first authors.

PALABRAS CLAVE

COVID-19;
SARS-CoV-2;
Coronavirus;
Trastornos psicóticos;
Suicidio

Psicosis reactivas en el contexto de la pandemia del COVID-19: perspectivas clínicas de una serie de casos**Resumen**

Introducción: El mundo está experimentando un escenario extremadamente estresante a causa de la pandemia del COVID-19. Esta situación inesperada y dramática podría incrementar la incidencia de los problemas de salud mental y, entre estos, los trastornos psicóticos. El objetivo de este documento es describir una serie de casos de psicosis reactiva breve, debidos al distrés psicológico debido a la pandemia actual de coronavirus.

Materiales y métodos: Reportamos una serie de casos que incluye a todos los pacientes con psicosis reactiva en el contexto de la crisis del COVID-19, ingresados en los Hospitales Universitarios Virgen del Rocío y Virgen Macarena (Sevilla, España) durante las 2 primeras semanas de la cuarentena obligatoria a nivel nacional.

Resultados: En este breve espacio de tiempo, 4 pacientes cumplieron los criterios de trastorno psicótico breve del manual diagnóstico y estadístico de trastornos mentales (DSM-5). Todos los episodios fueron desencadenados por el estrés derivado de la pandemia del COVID-19, y la mitad de los pacientes presentaron un comportamiento suicida grave a su ingreso.

Conclusiones: Actualmente podemos estar asistiendo a un incremento del número de trastornos psicóticos reactivos breves, como resultado de la pandemia del COVID-19. Este tipo de psicosis tiene un elevado riesgo de comportamiento suicida y, aunque es transitorio, tiene una elevada tasa de recurrencia psicótica y baja estabilidad diagnóstica a lo largo del tiempo. Por tanto, somos partidarios de una supervisión estrecha tanto en la fase aguda como en el seguimiento a largo plazo de estos pacientes.

© 2020 SEP y SEPB. Publicado por Elsevier España, S.L.U. Todos los derechos reservados.

Introduction

The classical concept of reactive psychosis, also called psychogenic psychosis, encompasses a set of acute onset and short-lived psychotic conditions triggered by psychological trauma.¹ This nosological entity as well as other traditional descriptions, such as bouffée délirante, cycloid psychosis or atypical psychosis, have limited validity and do not constitute independent diagnostic categories in modern psychiatric classifications.¹ However, reactive psychoses are subsumed in the tenth revision of the International Classification of Diseases (ICD-10) under the category, "acute and transient psychotic disorders" (ATPD) with the specifier 'with associated acute stress' (F23.x1),² and in the fifth edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM-5), under the category "brief psychotic disorder" (BPD; 298.8) with the specifier "with marked stressor(s)".³

The world is presently experiencing an exceptional situation, without any doubt extremely stressful, because of COVID-19. This ongoing public health crisis is the most serious since the 1918 influenza pandemic, which was the deadliest pandemic of the 20th century and had a devastating psychological impact across the globe.⁴ Spain is one of the countries most affected by the COVID-19 pandemic, and therefore, the government has declared a national state of emergency, ordering limited movement of its citizens within the country and home confinement of the population in the framework of a national quarantine without precedent.⁵ These dramatic circumstances could lead to an increase in mental disorders in our population, among them episodes of brief reactive psychosis. However, a review of the literature

showed that research on the role of pandemics in the onset of reactive psychosis in the general population is scarce.⁶ The aim of this report was to describe a case series of reactive BPD under the state of emergency in our country due to the COVID-19 pandemic.

Materials and methods

We report a case series including all consecutive patients aged 18–65 with brief reactive psychoses in the context of the COVID-19 crisis who were admitted to the Virgen del Rocío and Virgen Macarena University Hospitals (Seville, Spain) during the first two weeks of compulsory nationwide quarantine (from 14th to 28th March 2020). Both hospitals collectively cover a catchment area of approximately 1.5 million people from different sociodemographic backgrounds who are representative of the population served by public health services in Andalusia (Southern Spain). Organic, affective and substance-induced psychoses were ruled out. Other exclusion criteria were being COVID-19 positive or having symptoms of respiratory infection. Diagnosis of brief reactive psychosis was made according DSM-5 criteria for BPD.³ The case series was reported following the recommendations outlined in the CAse REport (CARE) guidelines⁷ and was approved by the Andalusian Biomedical Research Ethics Committee. All patients gave their informed consent to publish this report.

Results

During the abovementioned period, the following four patients were admitted for acute reactive psychosis caused

Table 1 Patient sociodemographic and clinical characteristics.

	Case A	Case B	Case C	Case D
<i>Sociodemographic characteristics</i>				
Age (years)	33	49	32	45
Gender	Male	Female	Female	Male
Marital status	Married	Divorced	Single	Married
Occupation	Employed	Employed	Employed	Employed
Education (primary, secondary or higher)	Primary	Higher	Higher	Secondary
<i>Clinical characteristics</i>				
Family history of psychosis	No	No	Yes	No
Personal psychiatric history	No	BPD ^a	AD ^a	No
<i>Psychopathological features of brief reactive psychosis^a</i>				
Delusions	Yes	Yes	Yes	Yes
Hallucinations	No	No	No	Yes
Disorganized Speech	No	Yes	No	No
Grossly disorganized or catatonic behavior	No	Yes	Yes	No
First-Rank Symptoms ^b	Yes	No	No	Yes
Associated suicidal behavior	Yes	No	No	Yes
Type of onset ^c	Abrupt	Abrupt	Sudden	Sudden
Duration of untreated psychosis (DUP)	2 days	5 days	6 days	4 days
Time to full remission of psychotic symptoms	2 days	17 days	13 days	3 days

Abbreviations: AD, adjustment disorder; BPD, brief psychotic disorder.

^a According to Diagnostic and Statistical Manual of Mental Disorders, fifth edition (DSM-5).³

^b Schneiderian first-rank symptoms include: (i) thought withdrawal, insertion and interruption; (ii) thought broadcasting; (iii) hallucinatory voices giving a running commentary on the patient's behavior, or discussing the patient among themselves; (iv) somatic hallucinations; (v) feelings or actions experienced as made or influenced by external agents; and (vi) delusional perception

^c Abrupt if the change from a non-psychotic to a clearly psychotic state occurred within 48 h or sudden if that change became established within 2 weeks.

by stress from the coronavirus pandemic. Their psychotic symptoms occurred in response to the fear of contagion (to themselves or their loved ones), the compulsory home-confinement or concerns about the economic consequences of the lockdown (such as job loss). All met DSM-5 diagnostic criteria for BPD with marked stressors at hospital discharge.³ [Table 1](#) shows patient sociodemographic and clinical characteristics.

Case A

Mr. A is a 33-years-old married man with no personal or family history of mental health problems who was hospitalized due to an abrupt psychotic episode with suicidal behavior. In the context of home-confinement and concerns about losing his job because of the COVID-19 pandemic, the patient developed a paranoid psychosis in which he believed that his loved ones were being controlled by machines and that the end of the world was coming. The suicide attempt was in response to such psychotic experiences. He was treated with 10 mg/day olanzapine and in 48 h, psychotic and suicidal symptoms had completely disappeared.

Case B

Mrs. B is a 43-year-old divorcee with a previous history of two BPD episodes (both reactive to stressful life events) who

was hospitalized due to a new psychotic relapse, this time related to distress caused by the COVID-19 crisis. Her symptoms, disorganized speech and behavior, emotional turmoil, marked irritability and delusions about her family being infected by coronavirus, had an abrupt onset and were triggered as a result of the enforced home-confinement. The patient was given 30 mg/day aripiprazole and 4 mg/day clonazepam, and her psychotic symptomatology progressively improved until full remission three weeks later.

Case C

Miss C is a 32-year-old single woman with a past history of adjustment disorder who was transferred to our hospital because of an acute episode of psychosis related to the pandemic. Since the beginning of the state of emergency, the patient had started to be extremely worried about the possibility of being a contagious asymptomatic carrier of coronavirus. On the night of admission, she had gone to another hospital with the delusional conviction that a friend of hers had died from COVID-19, and once there, experienced an episode of severe agitation. During the first interview, perplexity, overwhelming anxiety, suspiciousness, and marked self-referentiality were noted. She was treated with 20 mg/day aripiprazole and 3 mg/day lorazepam, and psychotic symptoms progressively disappeared until full remission over the course of two weeks.

Case D

Mr. D is a 45-year-old married man with no personal or family history of psychiatric disorders, who was admitted after attempting suicide in the context of acute psychosis. One week prior to admission, he had begun to feel distressed about the pandemic and started obsessively checking the worldwide COVID-19 death toll. In the following few days, the patient developed the delusional conviction that the Illuminati were behind the pandemic and schizophrenia-like symptomatology in which he could hear his neighbors' voices making running commentaries on his own thoughts. He attempted suicide because he believed he was going to be tortured. After receiving 1.5 mg/day risperidone and 2 mg/day lorazepam, psychotic symptoms rapidly remitted in 72 h.

Discussion

This paper reports on a case series of BPD triggered by psychological distress derived from the current COVID-19 pandemic. Other authors have reported cases similar to ours, and it is likely that this could be a generalized phenomenon in countries severely affected by the coronavirus pandemic.⁶ Thus, these exceptional circumstances being experienced around the world could lead to a significant increase in the incidence of psychotic disorders. In fact, there is already preliminary evidence in this respect in China, the country where the pandemic originated, and where an increase in the number of cases of first-episode schizophrenia has been observed in the months since the outbreak of COVID-19.⁸

The current pandemic, as other public health crises recently experienced, such as the severe acute respiratory syndrome (SARS) or Ebola, is leading to negative psychological effects in the population, not just because of fear of infection, but usually also because of the Government implementation of isolation and quarantine measures to avoid the spread of the disease.⁹ Such imposed home confinement restricts the freedom, routines and rhythm of conventional life and involves forced separation from family and friends that causes an increase in uncertainty about the unknown, as well as an overall feeling of loss of control.⁹ The fear of stigmatization and financial loss may substantially enhance this emotional distress in the population.⁹ Moreover, in today's age of digital information and social networks, the proliferation of fake news and conspiracy theories would contribute even further to increasing worry and social alarm.⁶

This acutely stressful scenario could play a relevant role in the genesis of new-onset psychoses and might also be an important risk factor for clinical decompensation in individuals with previous psychotic disorders.¹⁰ The relationship between adult life events and subsequent onset of psychosis has received little attention by researchers, although meta-analytical evidence suggests around a threefold increase in risk of psychosis in those experiencing stressful events.¹¹ The presence of these adverse psychosocial factors is also associated with higher frequency in the development of brief psychotic disorders than with schizophrenia or affective psychosis.¹ Along this line, emotional reactivity to stress

constitutes the substrate underlying the concept of brief reactive psychosis.¹ Thus, in keeping with stress-diathesis models,¹² the emergence of psychotic symptoms in these individuals with reactive psychosis might be associated not only with the acute stress related to the COVID-19 crisis (which would act as a stressor or state-dependent characteristic) but also with preexisting psychological or biological abnormalities (that would act as susceptibility or trait-like diathesis).

With regard to the description above, it should be noted that the increased emotional reactivity observed in individuals with brief reactive psychosis could also render them more vulnerable to impulsive behavior and lead to suicidal ideation when they must deal with highly stressful events such as the COVID-19 pandemic. In this vein, acute stress has been significantly associated with an increase in risk of suicide in persons with short-lived psychotic disorders,¹³ and suicidal behavior has also been reported under forced quarantine similar to what we are now experiencing.⁹ Therefore, it is paramount to assess suicidal symptoms in this population with brief reactive psychosis, especially in emergency settings where this task can often be passed over because of the rapidly changing psychopathology in such clinical cases.¹²

Other important points to keep in mind are the risk of recurrence and the diagnostic instability of such short-lived psychotic disorders.¹⁴ Although brief reactive psychoses have traditionally been considered clinical conditions with good prognosis, in almost half of such cases, their evolution over time is toward severe mental disorders, mostly schizophrenia or, to a lesser extent, bipolar disorder.^{1,14} The presence of hallucinations and schizophreniform symptomatology at the onset of psychosis, as well as later relapse, are factors associated with an increased risk of developing chronic psychotic disorders during follow-up.^{15,16} Moreover, long hospitalizations and the prescription of high dosages of antipsychotic medication seem to be predictors of poor prognosis in these short-lived psychotic disorders.^{17,18} It would therefore be necessary to prepare preventive approaches and close follow-up of this population with reactive psychosis when the COVID-19 crisis has ended, due to the abovementioned risk of recurrences and transition to long-lasting psychotic disorders of these individuals.

Summarizing, we conclude that the current COVID-19 pandemic and the mandatory nationwide quarantine enforced by authorities to control spread of the virus constitute a risk factor for the development of reactive psychoses. Such psychotic conditions are associated with a high risk of suicide, high rate of relapse and low diagnostic stability, making close clinical monitoring necessary in both the acute phase and in long-term follow-up.

Role of the funding source

This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

Conflict of interest

None.

Acknowledgements

We would like to thank the patients for allowing us to publish details of their cases.

References

1. Castagnini AC, Galeazzi GM. Acute and transient psychoses: clinical and nosological issues. *BJPsych Adv.* 2016;22:292–300.
2. World Health Organization. The ICD-10 classification of mental and behavioural disorders: clinical descriptions and diagnostic guidelines. Geneva: World Health Organization; 1992.
3. American Psychiatric Association. Diagnostic and statistical manual of mental disorders (DSM-5). 5th ed. Washington, DC: American Psychiatric Association; 2013.
4. Huremović D. Brief history of pandemics (pandemics throughout history). In: Huremović D, editor. *Psychiatry of pandemics*. Springer; 2019. p. 7–35.
5. Mitjà O, Arenas À, Rodó X, Tobias A, Brew J, Benlloch JM. Experts' request to the Spanish Government: move Spain towards complete lockdown. *Lancet.* 2020.
6. Zulkifli NA, Sivapatham S, Guan NC. Brief psychotic disorder in relation to coronavirus COVID-19 outbreaks: a case report. *Malay J Psychiatry.* 2020;29:1–6.
7. Gagnier JJ, Kienle G, Altman DG, et al. The CARE guidelines: consensus-based clinical case report guideline development. *J Clin Epidemiol.* 2014;67:46–51.
8. Hu W, Su L, Qiao J, Zhu J, Zhou Y. COVID-19 outbreak increased risk of schizophrenia in aged adults. *Research of SARS-COV-2.* 2020 <https://ncovdata.info/wp-content/uploads/2020/03/2020.02.29-chinaXiv-COVID-19-outbreak-increased-risk-of-schizophrenia-in-aged-adults.pdf> [accessed 8.04.20].
9. Brooks SK, Webster RK, Smith LE, Woodland L, Wessely S, Greenberg N, et al. The psychological impact of quarantine and how to reduce it: rapid review of the evidence. *Lancet.* 2020;395:912–20.
10. Yao H, Chen J-H, Xu Y-F. Patients with mental health disorders in the COVID-19 epidemic. *Lancet Psychiatry.* 2020.
11. Beards S, Gayer-Anderson C, Borges S, Dewey ME, Fisher HL, Morgan C. Life events and psychosis: a review and meta-analysis. *Schizophr Bull.* 2013;39:740–7.
12. Taylor SF, Grove TB, Ellingrod VL, Tso IF. The fragile brain: stress vulnerability, negative affect and gabaergic neurocircuits in psychosis. *Schizophr Bull.* 2019;45:1170–83.
13. López-Díaz Á, Lorenzo-Herrero P, Lara I, Fernández-González JL, Ruiz-Veguilla M. Acute stress and substance use as predictors of suicidal behaviour in acute and transient psychotic disorders. *Psychiatry Res.* 2018;269:414–8.
14. Castagnini AC, Fusar-Poli P. Diagnostic validity of ICD-10 acute and transient psychotic disorders and DSM-5 brief psychotic disorder. *Eur Psychiatry.* 2017;45:104–13.
15. López-Díaz Á, Fernández-González JL, Lara I, Crespo-Facorro B, Ruiz-Veguilla M. The prognostic role of catatonia, hallucinations, and symptoms of schizophrenia in acute and transient psychosis. *Acta Psychiatr Scand.* 2019;140:574–85.
16. Poon JYK, Leung CM. Outcome of first-episode acute and transient psychotic disorder in Hong Kong Chinese: a 20-year retrospective follow-up study. *Nord J Psychiatry.* 2017;71:139–44.
17. Wang HY, Guo WJ, Li XJ, et al. Higher required dosage of antipsychotics to relieve the symptoms of first-onset Acute and Transient Psychotic Disorder (ATPD) predicted the subsequent diagnostic transition to schizophrenia: a longitudinal study. *Schizophr Res.* 2018;193:461–2.
18. Queirazza F, Semple DM, Lawrie SM. Transition to schizophrenia in acute and transient psychotic disorders. *Br J Psychiatry.* 2014;204:299–305.