

# Impact of the COVID-19 pandemic on patients with pre-existing mood disorders

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**Objectives:** To examine the psychological and social impact of the COVID-19 pandemic on patients with established mood disorders during a period of stringent mandated social restrictions.

**Methods:** Semi-structured interviews were conducted with 36 individuals attending the Galway–Roscommon Mental Health Services with an International Statistical Classification of Diseases and Related Health Problems, tenth revision (ICD-10) diagnosis of either Bipolar Affective Disorder (BPAD) ( $n = 20$ ) or Emotionally Unstable Personality Disorder (EUPD) ( $n = 16$ ) in this cross-sectional study. We determined the impact of the COVID-19 restrictions on anxiety and depressive symptoms, impulsivity, thoughts of self-harm, social and occupational functioning and quality of life.

**Results:** The COVID-19 pandemic deleteriously impacted mental health (56.3% *v.* 15.0%,  $\chi^2 = 7.42$ ,  $p = 0.02$ ), and mood (75.0% *v.* 20.0%,  $\chi^2 = 11.17$ ,  $p = 0.002$ ) to a greater extent in the EUPD compared to the bipolar disorder cohort, with 43.8% of individuals with EUPD reporting an increase in suicidal ideation. Psychometric rating scales [Beck Anxiety Inventory (BAI), Beck Depression Scale (BDS), Beck Hopelessness Scale (BHS), Barratt Impulsivity Scale (BIS)] and Likert scales for anxiety, mood and quality of life noted significantly higher levels of psychopathology in the EUPD cohort ( $p < 0.01$ ). Qualitative analysis reflected quantitative data with themes of the employment of maladaptive coping mechanisms and reduced mental health supports notable.

**Conclusions:** Individuals with EUPD are experiencing significant mental health difficulties related to the COVID-19 pandemic. The provision and recommencement of therapeutic interventions to this cohort, in particular, are warranted given the significant distress and symptoms being experienced.

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**Key words:** Bipolar affective disorder, borderline personality disorder, COVID-19, emotionally unstable personality disorder, mood disorders.

## Introduction

The novel Coronavirus SarsCo-V2 was first identified in Wuhan in December 2019, following a cluster of patients who presented with severe viral pneumonia (Chan *et al.* 2020). The disease associated with COVID-19, spread rapidly worldwide, with a global pandemic declared by the World Health Organization (WHO) on 11 March 2020. The first case of COVID-19 in the Republic of Ireland was documented on 29 February 2020.

Robust public health containment measures have subsequently been implemented worldwide due to the serious physical health risks posed, particularly to vulnerable patient groups. This includes Ireland, where a tiered range of stringent measures have been introduced, which since May 2020 have involved a five-level system depending on the trajectory of case numbers and based on the advice of the National Public Health

Emergency Team (NPHET). These measures include advice regarding 'cocooning' of elderly and otherwise vulnerable individuals, limiting travel from one's home (5km radius with Level 5 restrictions) and closure of many facilities deemed as non-essential. In addition to social outlets such as restaurants and non-essential retail units, these facilities include centres attended by individuals with mental health disorders such as day centres and day hospitals. Additionally, there has been a significant limitation in accessing a range of individual or group therapy interventions (particularly for face-to-face sessions) depending on the tier of restrictions either within or outside the secondary mental health services (Citizens Information, 2021).

Previous viral pandemics have been associated with increased psychological distress (WHO "Outbreak Communication Guidelines", 2005), with some initial research noting an increase in psychiatric pathology, including an increase in mood and anxiety symptoms, in individuals with no prior diagnosed mental disorder subsequent to mandated governmental restrictions secondary to COVID-19 (Hyland *et al.* 2020, Wang *et al.*

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2020). There is, however, limited research to date assessing the impact of the COVID-19 pandemic on individuals with pre-existing mental health disorders attending secondary mental health services. In contrast to general population samples, a recent study of the impact of COVID-19 for individuals with pre-existing anxiety disorders attending a secondary mental health service in the Republic of Ireland (Plunkett *et al.* 2020) demonstrated a relatively modest impact of the COVID-19 pandemic and its associated mandatory restrictions on anxiety symptoms although a greater adverse impact was noted in relation to social functioning.

Emotionally unstable personality disorder (EUPD) has a reported point prevalence in the population of approximately 1% (Samuels *et al.* 2002, Coid *et al.* 2006) with rates amongst patients attending secondary mental health services of approximately 10% (Zimmerman *et al.* 2005). Key symptoms of this disorder that potentially might impact an individuals' coping skills during periods of stress include mood instability, emotional instability, interpersonal relationship difficulties, poor impulse control, self-injurious behaviour and easily perceived rejection. Additionally, individuals with EUPD have high rates of co-morbidity with other mental health disorders including major depressive disorder, anxiety disorders and substance use disorders (Coid *et al.* 2006), with a significantly increased risk of suicide compared to the general population (Doyle, *et al.* 2016). Psychotherapeutic interventions to support individuals with EUPD who attend secondary mental health services include Dialectical Behaviour Therapy (DBT) (Linehan *et al.* 1993), Mentalization-Based Therapy (MBT) (Bateman & Fonagy, 2004) and Schema-Focused Therapy (SFT) (Young, 1999) in addition to other briefer skills-based group therapy sessions, many of which have been minimally available since the commencement of the COVID-19 pandemic. Even where such therapeutic interventions have continued, using online formats, a reduction in their therapeutic efficacy due to technological difficulties or reduced patient commitment has been reported (Lakeman & Crighton 2020).

Bipolar disorder has a similar point prevalence to EUPD (Pini *et al.* 2005), and is likewise associated with mood instability, albeit of greater severity and encompasses (hypo)manic and depressive episodes with anxiety symptoms often additionally present, particularly in patients with bipolar I disorder (Simon *et al.* 2004). A recent self-report study noted an excess rate of symptomatology and distress in individuals diagnosed with bipolar disorder compared to individuals with major depressive disorder or healthy controls secondary to the COVID-19 pandemic (Van Rheenen *et al.* 2020). It is, thus, possible that individuals with both EUPD

and bipolar disorder may both be significantly deleteriously impacted secondary to COVID-19 and its associated mandated restrictions.

To our knowledge, there have been no published studies to date, examining the impact of the COVID-19 pandemic and its associated mandated restrictions on individuals with pre-existing EUPD or bipolar disorder who are attending secondary mental health services. Consequently, in this study, we wanted to assess the psychological and social impact of COVID-19 including its mandated social restrictions on individuals diagnosed with either EUPD or bipolar disorder attending a secondary mental health service.

## Methods

### Participants

All patients actively attending a single geographical sector-based adult community mental health team for the management of either bipolar disorder ( $n = 25$ ) or EUPD ( $n = 25$ ) were invited to participate in this study by letter, and was subsequently phoned by the researcher to provide clarification of the purpose of and procedure associated with this study. Clinical diagnoses were based on the International Statistical Classification of Diseases and Related Health Problems, tenth revision (ICD-10) diagnostic criteria and were reviewed and confirmed by a senior clinician prior to study participation. Inclusion criteria for the study required patients to have a clinical diagnosis of either EUPD or bipolar disorder, be over 18 years of age and have the capacity to provide written informed consent for study participation. Participants were excluded if they were clinically unstable at the time of recruitment (i.e. expressing suicidal ideation with intent, experiencing a manic or severe depressive episode), fulfilled criteria for an intellectual disability (intelligence quotient < 70) or had a confirmed diagnosis of dementia.

Ethical approval was attained prior to study commencement from the Galway University Hospitals Research Ethics Committee (C.A. 2362). All participants signed a written consent form, which was returned to researchers prior to study commencement. All responses were anonymised and all data were stored securely and handled in accordance with the Data Protection Act, 2018.

### Procedure

No individuals met the exclusion criteria. For individuals providing written informed consent ( $n = 36$ , 72%), clinical case notes were reviewed to attain basic demographic and clinical data. Demographic data included age, gender, marital, domiciliary and

employment or vocational status. Clinical data included psychiatric diagnosis, prescribed psychotropic medications including the dose of medications, alcohol, tobacco and psychoactive substance use.

### Assessments

A semi-structured interview was conducted by a combination of telephone call and a self-completed written questionnaire (in line with governmental and health service policy) between 5 June and 26 June 2020, approximately 12–15 weeks after government-mandated social restrictions (referred to anecdotally as 'lockdown') had commenced. These interviews occurred just prior to the easing of initial mandated restrictions (i.e. restaurants were allowed to reopen with restrictions on customer numbers on 29 June 2020).

Demographic and clinical variables attained from clinical record review were supplemented, where required, by data attained from the clinical interview. Additional information pertaining to physical health status, including COVID-19 diagnosis and testing status, current domiciliary status and effect of COVID-19 on the participants' employment or vocational status were assessed. We also assessed for any recent changes to substance use and an increase in deliberate self-harm or thoughts of suicide.

Categorical data pertaining to the effect of COVID-19 on participants' mental health status overall and severity of mood and anxiety symptoms (better, no change, worse) was attained. Participants' subjective experience of the impact of COVID-19 pandemic was additionally measured utilising Likert scales (0–10) to measure: (1) anxiety symptoms; (2) mood symptoms; (3) social functioning; (4) occupational functioning and (5) quality of life; with 0 indicating no adverse impact and 10 indicating a very severe impact due to restrictions imposed because of the COVID-19 pandemic (Appendix 1).

Established psychometric instruments with known high reliability and validity indices were utilised to measure current symptomatology and included the: (1) Beck Anxiety Inventory (BAI, Beck *et al.* 1988a); (2) Beck Depression Inventory (BDI, Beck *et al.* 1988b); (3) Beck Hopelessness Scale (BHS, Beck *et al.* 1988c) and (4) Barratt Impulsivity Scale (BIS, Patton *et al.* 1995).

### Statistical analysis

Statistical analysis was performed using the Statistical Package for Social Sciences (SPSS) 24.0 for Windows (SPSS Inc., IBM, USA). Descriptive analyses (frequencies, percentages, means and standard deviation) on key demographic and clinical data were performed for both categorical and continuous variables as appropriate. We utilised the Student's *t*-test for parametric

data and the chi-square ( $\chi^2$ ) test for non-parametric data as appropriate. A linear regression model was utilised to assess factors affecting increased suicidality. Data were examined to determine if normally distributed by visual inspection utilising histograms and by Q–Q plots and non-parametric testing of continuous data utilising the Mann–Whitney U test were additionally undertaken as appropriate. All statistical tests were two-sided and the  $\alpha$ -level for statistical significance was 0.05. Free-text data were examined and were open-coded based on the framework of the questionnaire and on any other themes unrelated to these questions that emerged. This data attained from free texts was then grouped into themes by consensus of the researchers (JMcL, BH, MOG).

## Results

### Demographic and clinical data

Response rates of 64.0% for the EUPD cohort ( $n = 16$ ) and 80.0% for the bipolar disorder cohort ( $n = 20$ ) were attained. There was no significant difference in terms of gender or age between respondents and non-respondents. Non-respondents were those who did not provide written informed consent to participate in the study. All participants who provided written informed consent subsequently participated in the study. No individual was excluded from the study participation due to fulfilling the study exclusion criteria. Data for the 36 study participants are presented in Table 1. Of note, the EUPD cohort had a higher percentage of females (93.8% *v.* 60.0%,  $\chi^2 = 5.40$ , Fishers' Exact  $p = 0.026$ ), and a younger mean age compared to the bipolar disorder cohort [28.3 (s.d. = 9.9) years *v.* 44.4 (s.d. = 15.9),  $t = 3.69$ ,  $p = 0.001$ ]. Alcohol use was more common (81.3% *v.* 45.0%,  $\chi^2 = 4.92$ ,  $p = 0.04$ ) and cannabis use was non-significantly more common (43.8% *v.* 15.0%,  $\chi^2 = 3.66$ ,  $p = 0.07$ ) in the EUPD compared to the bipolar disorder cohort. High rates of polypharmacy were seen in both groups (68.75% EUPD *v.* 75% bipolar disorder,  $\chi^2 = 0.173$ , Fishers' Exact  $p = 0.722$ ). All patients bar one in the EUPD group were treated with at least one psychotropic agent, all individuals in the bipolar disorder cohort were treated with an antipsychotic and/or mood stabiliser agent. Antidepressant medications were more commonly prescribed in the EUPD compared to the bipolar disorder cohort (87.5% *v.* 50%,  $\chi^2 = 5.625$ ,  $p = 0.018$ ) (see Table 1).

### Symptomatology

Mean scores for psychometric scales and Likert scales assessing the impact of COVID-19 are detailed in Table 2. The EUPD cohort reported that the COVID-19 pandemic had deleteriously impacted their

**Table 1.** Demographic and clinical data

Variable	EUPD ( <i>n</i> = 16)	BD ( <i>n</i> = 20)
	<i>n</i> (%)	<i>n</i> (%)
<b>Age</b> (standard deviation)	28.3 (9.9)	44.4 (15.9)
<b>Gender</b>		
Male	1 (6.3)	8 (40.0)
Female	15 (93.8)	12 (60.0)
<b>Marital status</b>		
Single/Partner	12 (75.0)	14 (70.0)
Married/Civil partnership	3 (18.8)	2 (10.0)
Separated/Divorced	1 (6.3)	4 (20.0)
<b>Psychotropic use</b>		
SSRI/SNRI	14 (87.5)	10 (50.0)
Mood stabiliser	1 (6.3)	12 (60.0)
Antipsychotic	9 (56.3)	17 (85.0)
Benzodiazepine/hypnotic	2 (12.5)	2 (10.0)
Psychotropic polypharmacy	11 (68.8)	15 (75.0)
<b>Employment/Vocational status</b>		
Unemployment	4 (25.0)	6 (30.0)
Employed	11 (68.8)	14 (70.0)
Professional occupation	3 (18.8)	3 (15.0)
Employment lost due to COVID-19	7 (43.8)	9 (45.0)
In third-level education	1 (6.3)	0 (0.0)
<b>Domiciliary status</b>		
Parents	2 (12.5)	4 (20.0)
Partner/Spouse	5 (31.3)	3 (15.0)
Single parent	0 (0.0)	1 (5.0)
Housemates/Friends	7 (43.8)	5 (25.0)
Alone	2 (12.5)	7 (35.0)
Living situation affected by COVID-19	4 (25.0)	3 (15.0)
<b>Substance use</b>		
Alcohol	13 (81.3)	9 (45)
Mean alcohol units/week*	9.3	11.7
Nicotine	9 (56.3)	10 (50.0)
Mean cigarettes smoked per day	12.9	17.3
Cannabis	7 (43.8)	3 (15.0)
Other psychoactive substances	1 (6.3)	0 (0.0)
<b>Throat and nasal swab test for COVID-19</b>		
Yes	3 (18.8)	3 (15.0)
<b>COVID-19 detected</b>		
Yes	0 (0.0)	0 (0.0)
<b>Co-morbid physical health diagnosis</b>		
Yes	7 (43.8)	5 (25.0)
No	9 (56.2)	15 (75.0)

BD, Bipolar disorder, EUPD, Emotionally unstable personality disorder, SSRI, Selective serotonin reuptake inhibitor, SNRI, Serotonin and noradrenaline reuptake inhibitor.

\*One outlier was removed from both groups due to very high unit intake.

mental health (56.3% *v.* 15.0%,  $\chi^2 = 7.42$ ,  $p = 0.02$ ), mood (75.0% *v.* 20.0%,  $\chi^2 = 11.17$ ,  $p = 0.002$ ) and anxiety symptoms (non-significantly) (68.8% *v.* 35.0%,  $\chi^2 = 5.10$ ,  $p = 0.09$ ) to a greater extent compared to the bipolar disorder cohort. Higher mean scores were demonstrated on the anxiety, mood, social functioning and quality of

life Likert scales in the EUPD compared to the bipolar disorder cohort, with occupational functioning similarly impacted for both groups. Higher levels of symptomatology (depressive and anxiety symptoms, impulsivity and hopelessness) were additionally noted in the EUPD cohort for all psychometric instruments in the

**Table 2.** Impact of COVID-19

Variable	EUPD ( <i>n</i> = 16)	BPAD ( <i>n</i> = 20)	Statistics
	<i>n</i> (%)	<i>n</i> (%)	$\chi^2$ , <i>df</i> , <i>p</i>
<b>Self-reported direct effects of COVID-19</b>			
Limited access to MH services	13 (81.3)	4 (20.0)	12.6, 1, 0.001*
Sought access to additional MH support	6 (37.5)	7 (35.0)	0.024, 1, 0.877
Suicidal ideation or thoughts of self-harm	7 (43.8)	0 (0.0)	10.862, 1, 0.001*
<b>Increased use of substances</b>			
Any substance	9 (64.3)	8 (61.5)	0.022, 1, 1.000*
Alcohol	3 (23.1)	4 (44.4)	1,119, 1, 0.292*
Cigarettes	4 (44.4)	3 (30.0)	0.425, 1, 0.650*
Cannabis	2 (28.6)	1 (25.0)	0.016, 1, 1.000*
<b>Effect on mental health</b>			
Improvement	3 (18.8)	4 (20.0)	7.56, 2, 0.023*
No change	4 (25.0)	13 (65.0)	
Disimprovement	9 (56.3)	3 (15.0)	
<b>Effect on mood symptoms</b>			
Improvement	1 (6.3)	2 (10.0)	11.14, 2, 0.002*
No change	3 (18.8)	14 (70.0)	
Disimprovement	12 (75.0)	4 (20.0)	
<b>Effect on anxiety symptoms</b>			
Improvement	2 (12.5)	2 (10.0)	5.08, 2, 0.092*
No change	3 (18.8)	11 (55.0)	
Disimprovement	11 (68.8)	7 (35.0)	
	Mean (s.d.)	Mean (s.d.)	<i>t</i> , <i>p</i>
<b>Psychometric data</b>			
BAI	39.56 (11.78)	13.65 (12.83)	3.788, <0.001
BDI	31.13 (10.34)	9.35 (7.88)	7.174, <0.001
BHS	13.19 (5.01)	3.50 (3.56)	6.778, <0.001
BIS	76.38 (15.32)	60.25 (10.15)	3.788, 0.001
<b>Likert scales utilised**</b>			
Anxiety	6.44 (3.05)	2.65 (2.92)	3.79, 0.001
Mood	6.13 (2.8)	2.15 (2.92)	4.13, <0.001
Social functioning	6.81 (3.25)	3.00 (3.656)	3.264, 0.003
Occupational functioning	5.75 (4.18)	4.60 (4.32)	0.804, 0.427
Quality of life	6.38 (2.92)	3.20 (2.97)	3.214, 0.003

BAI, Beck Anxiety Inventory, BDI, Beck Depression Inventory, BHS, Beck Hopelessness Scale, BIS, Barratt Impulsiveness Scale.

\*Fisher's Exact Test is utilised.

\*\* Trimmed scale (1–10).

EUPD compared to the bipolar disorder cohort ( $p < 0.001$ ), with mean scores in the severe range for anxiety (BAI) and depressive symptoms (BDI) and in the moderate risk range for suicide (BHS) in the EUPD cohort, with scores in the normal or mild symptom range for the bipolar disorder cohort. Seven (43.8%) individuals in the EUPD cohort were compared to no bipolar disorder participants and reported increased levels of suicidal ideation or thoughts of self-harm, which they attributed to the impact of COVID-19 ( $\chi^2 = 10.862$ , Fishers' Exact  $p = 0.001$ ).

#### **Other sequelae of COVID-19**

Of those employed, 7 (64.4%) of the EUPD cohort and 9 (64.3%) of the bipolar disorder cohort had their employment terminated (at least temporarily) due to the impact of the COVID-19 pandemic. EUPD participants (81.3% *v.* 20.0%,  $\chi^2 = 12.60$ ,  $p = 0.001$ ) described having a more limited access to mental health services compared to bipolar disorder participants. Both cohorts reported increased the use of pre-existing substances (EUPD = 61.5%; bipolar disorder = 64.3%), with no

**Table 3.** Regression analysis of suicidal ideation in EUPD participants

	Unstandardised coefficients		Statistics	
	B	S.E.	t	p
(Constant)	-0.212	1.406	-0.151	0.885
Gender	-0.007	0.560	-0.012	0.990
Age	0.016	0.015	1.007	0.347
Increased substance use	0.757	0.235	<b>3.224</b>	<b>0.015</b>
Limited access to services	-0.143	0.358	-0.400	0.701
Barratt Impulsivity Scale	0.006	0.013	0.500	0.633
Beck's Anxiety Inventory	-0.002	0.017	-0.108	0.917
Beck's Depression Inventory	0.007	0.018	0.390	0.708
Beck's Hopelessness Scale	-0.016	0.031	-0.497	0.634

difference in increased use in either cohort. We noted a correlation between those who increased their use of substances due to COVID-19 and those with increased suicidality (Pearson correlation = 0.778,  $p = 0.001$ ). Only increased substance use was demonstrated to have a significant impact on increased suicidality in the EUPD cohort in a regression model including age, gender, limited access to services and clinical ratings of depression, anxiety, hopelessness and impulsivity ( $B = 0.757$ ,  $p = 0.015$ ) (Table 3).

#### Qualitative data

Twenty-three (63.8%) participants [15 (93.75%) EUPD, 8 (40%) bipolar disorder] provided 39 optional free-text responses on the written questionnaire, with 32 (82.1%) of these comments noting a negative impact of COVID-19 and its mandated restrictions. In total, 5 themes emerged: (1) reduced mental health supports ( $n = 14$ , 10 EUPD, 4 bipolar disorders); (2) negative vocational impact ( $n = 7$ , 4 EUPD, 3 bipolar disorders); (3) change in domiciliary status ( $n = 6$ , 4 EUPD, 2 bipolar disorders); (4) utilisation of maladaptive coping strategies ( $n = 5$  – all EUPD) and (5) beneficial effects ( $n = 7$ , 4 EUPD, 3 bipolar disorders) (see Box 1). These comments highlighted that whilst participants in both cohorts had adverse sequelae secondary to the COVID-19 pandemic, EUPD participants particularly struggled with reduced mental health supports including group psychotherapy sessions and engaged in utilising maladaptive coping mechanisms including self-harm in some cases.

#### Discussion

To our knowledge, this is the first study to date to examine the impact of COVID-19 and its mandated restrictions for individuals with pre-existing EUPD or bipolar disorder attending a secondary mental health service. Participants in the EUPD group reported a

significant deleterious impact of COVID-19 across all measures of mood, anxiety and hopelessness as well as higher rates of psychoactive substance use and suicidal ideation. They reported greater difficulty accessing mental health supports and reported a greater impact of COVID-19 on their social functioning and overall impact on quality of life compared to the bipolar disorder participants.

There are a number of potential reasons why individuals with EUPD may disproportionately struggle to cope with the COVID-19 pandemic. First, many individuals with EUPD have a strong requirement for attachment including emotional and physical proximity to others (Aaronson *et al.* 2006), thus the mandated requirements for social distancing might prove additionally difficult for this cohort. Fears of abandonment and rejection sensitivity (Poggi *et al.* 2019) may additionally make these restrictions difficult for this patient cohort. The increased isolation, and intensification of interpersonal conflicts, potentially secondary to perceived abandonment may lead to increased maladaptive coping strategies as has been noted subsequent to other major traumatic events (North *et al.* 2011; Calati *et al.* 2019), which is consistent with the increased utilisation of psychoactive substances and high levels of suicidal ideation noted in this study. Impulsivity scores were noted to be particularly high in the EUPD cohort in this study, which would additionally increase the risk of engagement in maladaptive coping strategies.

The impact of COVID-19-related social restrictions on healthcare delivery has led to a reduction in available psychotherapeutic input and where such therapeutic inputs have continued, these have predominantly been delivered utilising telecommunication fora. It is notable that 80% of the EUPD cohort reported limited access to mental health services, with qualitative comments suggestive of feelings of abandonment and perceptions of care being of lower quality, consistent with



**Box 1.** Themes emanating from free-text responses: Patient comments regarding their experiences during the COVID-19 pandemic.

Theme 1: Reduced Mental Health Supports ( $n = 14$ , EUPD = 10, bipolar disorder = 4)

- 'I can't attend the Day Centre anymore, I've had to call Samaritans instead' (#2 Male, 61y/o, BPAD)
- 'The mental health service is a joke, it's just a phone call now, what use is that?' (#34 Female, 29y/o, UPD)
- 'The DBT programme was stopped, I get a phone call but I find it doesn't help' (#33 Female, 29y/o, EUPD)

Theme 2: Negative Vocational Impact ( $n = 7$ , EUPD = 4, bipolar disorder = 3)

- 'I was working in a community employment scheme job, but that's gone now' (#2 Male, 61y/o, BPAD)
- 'I felt pressured into returning to work early with no testing or precautions and that resulted in me going high' (#7 Female, 62 y/o, BPAD)
- 'I was worried about going to work because of my (physical) health issues- my employers didn't care and I lost my job' (#49 Female, 22 y/o, EUPD)

Theme 3: Change in Domiciliary Status ( $n = 6$ , EUPD = 4, bipolar disorder = 2)

- 'I have had to live away from my girlfriend, in a different county as my parents are elderly; that's been really hard' (#2 Male, 61y/o, BPAD)
- 'I've had to move back in with my parents because I can't get any work' (#19 Male, 20 y/o, BPAD)
- 'Most of my housemates moved out during lockdown, because we were fighting more often' (#29 Female, 21 y/o, EUPD)

Theme 4: Utilisation of Maladaptive Coping Mechanisms ( $n = 5$ , all EUPD)

- 'I've started using cocaine when I drink now and I've been smoking more cannabis' (#27 Female, 21 y/o, EUPD)
- 'I have found it really hard to distract myself from negative thoughts, due to the isolation. I have self-harmed a few times recently which I hadn't done for a while' (#27 Female, 21 y/o, EUPD)
- 'I have been stressed about money since losing my job and I have been thinking more about suicide' (#49 Female, 22 y/o, EUPD)

Theme 5: Beneficial Effects ( $n = 7$ , EUPD = 4, bipolar disorder = 3)

- 'It gave me more time for reflection, I finally had time for some spring cleaning and I was able to better manage my diet' (#12 Female, 74 y/o, BPAD)
- 'There was less traffic on the road and work was more flexible' (#10 Female, 38 y/o, BPAD)
- 'With the students not around, I was able to rent a house' (previously homeless) (#34 Female, 29 y/o, EUPD)

previous reported findings from clinicians of reduced therapeutic efficacy from online therapeutic interventions (Lakeman & Crighton 2020). Consequently, some individuals with EUPD are experiencing a significant increase in symptoms, engaging in maladaptive coping strategies deleterious for their mental health and have reduced access to perceived higher quality therapeutic supports.

The bipolar disorder cohort, similar to a previous cohort of 30 individuals with anxiety disorders (Plunkett *et al.* 2020) experienced only a modest impact in relation to symptomatology or quality of life (mean quality of life Likert score for anxiety disorder group 4.2 *v.* 3.2 for bipolar disorder group), with the greatest impact of the COVID-19 restrictions relating to reduced

occupational functioning. Although not an initial study hypothesis, *post hoc* analysis compared results from this study to previous findings (Plunkett *et al.*, 2020) from the above described anxiety disorder cohort. This analysis demonstrated statistically significant lower anxiety symptoms, utilising the BAI and Likert scales ( $p < 0.001$ ), and better social ( $p = 0.036$ ), and occupational functioning ( $p = 0.038$ ) in the anxiety disorder cohort compared to the EUPD cohort, with no significant difference in anxiety or functioning compared to the bipolar disorder cohort. Plausible reasons for the bipolar disorder cohort maintaining a more stable mental state, albeit with some ongoing symptoms, relate to continued support at approximately similar levels from their treating community mental health team and

potentially higher levels of resilience, though resilience is a complex entity that could not be captured by this study. Many participants with bipolar disorder have continued to attain input from community team members (for medical reviews, blood tests, psychotropic medication administration) and would not have been engaging in many of the therapeutic interventions that have subsequently been cancelled or have continued online (i.e. DBT, MBT, SFT). Many individuals, including those with mental health disorders have significant qualities of resilience (Herman *et al.* 2011) and are able to engage in appropriate coping mechanisms, and thus adapt positively to maintain their mental health despite the adversity experienced with COVID-19 and its associated restrictions.

There are a number of limitations to this study, the most significant of which is the modest sample size and the absence of a control group. However, to date, no cross-sectional studies have been conducted in this patient cohort and this study can serve as a pilot study for future research studies with larger numbers of participants. Whilst we had no control group, we did include two different cohorts of participants who experienced mood instability, and we believe that valid data are presently demonstrating a more deleterious impact of COVID-19 and its mandated restrictions in the EUPD cohort. As the study was undertaken within one community mental health team, it is possible that findings may not be generalisable to other services. Our cohort of EUPD participants had a female predominance, which is consistent with existing literature (Korzekwa *et al.* 2008). Although the psychometric instruments utilised have high reliability and validity indices, as they are subjectively completed, they may be associated with higher levels of response bias compared to objective psychometric instruments. However, qualitative data were additionally collected, which corroborated many of the quantitative findings. Finally, as we did not have baseline metrics for either group, it is possible that the EUPD group would have demonstrated increased morbidity on these scales prior to the COVID-19 pandemic, and that these findings are a result of the instability of mood and impulsivity associated with the disorder as opposed to a direct impact of COVID-19. However, clinical interviews, Likert scales and qualitative interviews all supported an impact of the COVID-19 pandemic and its associated mandated restrictions. Longitudinal evaluation of these patient cohorts is planned and will further elucidate the impact of the COVID-19 pandemic for these participants.

## Conclusion

Individuals with EUPD are experiencing significant mental health difficulties related to the COVID-19

pandemic. The provision and recommencement of therapeutic interventions to this cohort, in particular, are warranted given the significant distress and symptoms being experienced and maladaptive coping mechanisms being employed by many individuals. The study supports that the option of delivering therapeutic interventions on a face-to-face basis is important for some patients attending adult mental health services.

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## Contributions

All authors participated in the design of the study, and critical review of the manuscript.

## Financial support

Formal financial support was not obtained for the study.

## Conflicts of interest

None.

## Ethical standards

Ethical approval was obtained for this study from the Galway Clinical Research Ethics Committee. The authors assert that all procedures contributing to this work comply with the ethical standards of the relevant national and institutional committee on human experimentation with the Helsinki Declaration of 1975, as revised in 2008. Research ethics committee approval was attained prior to study commencement.

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**Appendix 1: Likert Scale Data**

Please circle the number that best describes how the COVID-19 virus and the associated restrictions have affected you.

0 = No Effect

10 = Severe (Negative) Effect

Anxiety levels	0	1	2	3	4	5	6	7	8	9	10
Mood Symptoms	0	1	2	3	4	5	6	7	8	9	10
Functioning: Social	0	1	2	3	4	5	6	7	8	9	10
Functioning: Occupation	0	1	2	3	4	5	6	7	8	9	10
Quality of Life	0	1	2	3	4	5	6	7	8	9	10

Additional comments:

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