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Original Research

A four-year longitudinal evaluation of the impact of the COVID-19 pandemic on patients with a range of mental health disorders

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Abstract

Objectives: To examine if the COVID-19 pandemic had a differential impact longitudinally over four years on psychological and functional impact in individuals with a pre-existing anxiety, bipolar or emotionally unstable personality Disorder (EUPD).

Methods: Semi-structured interviews were conducted with 52 patients attending the Galway-Roscommon Mental Health Services with an International Classification of Diseases (ICD)-10 diagnosis of an anxiety disorder ($n = 21$), bipolar disorder ($n = 18$), or EUPD ($n = 13$) at four time points over a four-year period. Patients' impression of the impact of the COVID-19 pandemic was assessed in relation to anxiety and mood symptoms, social and occupational functioning and quality of life utilising psychometric instruments and Likert scale data, with qualitative data assessing participants' subjective experiences.

Results: Individuals with EUPD exhibited higher anxiety (BAI) symptoms compared to individuals with bipolar disorders and anxiety disorders ($F = 9.63$, $p = 0.001$), with a more deleterious impact on social functioning and quality of life also noted at all time points. Themes attained from qualitative data included isolation resulting from COVID-19 mandated restrictions ($N = 22$), and these same restrictions allowing greater appreciation of family ($n = 19$) and hobbies/nature ($n = 13$).

Conclusions: Individuals with EUPD reported increased symptomatology and reduced functioning and quality of life as a consequence of the COVID-19 pandemic over a four-year period compared to individuals with either an anxiety or bipolar disorder. This could be related to the differing interaction of the COVID-19 pandemic's restrictions on the symptoms and support requirements of this cohort.

Keywords: Anxiety disorder; borderline personality disorder; bipolar disorder; COVID-19; emotionally unstable personality disorder

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Introduction

On March 11th 2020, COVID-19, the infectious disease associated with the coronavirus, SARS-CoV-2 was characterised as a global pandemic by the World Health Organisation (WHO) (Yuki et al., 2020). Subsequent robust public health restrictions were enforced in many countries, including Ireland, in an attempt to mitigate the potential impact of the COVID-19 pandemic on health service delivery. Such restrictions of varying severity were in place for almost two years (based on the advice of the National Public Health Emergency Team (NPHET) in Ireland), with the most stringent of these implemented for approximately half of this time. These included social gatherings of no more than six people, a ban on indoor dining and a restriction on people's movements to within five kilometres of their home. Consequently, many therapeutic interventions normally available for individuals with mental health difficulties both within and outside mental health services were

unattainable including group psychotherapeutic activities during this time. Where such services continued, most had to adapt to a range of public health measures, with for example face-to-face interactions often replaced by tele-consultations (Kopelovich et al., 2021, Kuzman et al., 2021). The anticipated social isolation, a putative risk factor for a variety of mental disorders (Beutel et al., 2017) was expected to place an additional strain on mental health services with the President of the Royal College of Psychiatrists in the United Kingdom warning of a "tsunami" of mental health difficulties presentations (Torjesen 2020).

The impact of these prolonged periods of restrictions and lockdowns for individuals' mental well-being is somewhat unclear with contrasting divergent data available to date. Early research documented an initial increase in the prevalence of anxiety and depressive symptoms amongst individuals attending mental health services and in general population cohorts during 2020 (Santomauro et al., 2021), although this was not a universal finding (Plunkett et al., 2021, McLoughlin et al., 2022). However, the longer-term veracity of this assertion has been challenged on the grounds that data were collected during the nascent phase of COVID-19 (early 2020), where symptomatology was representative of an acute reaction or distress to an unknown, unexpected and

unfolding crisis (Daly & Robinson 2022, Robinson et al., 2022, Bartels et al., 2021). Subsequent studies revealed that initial increases in symptoms at pandemic onset were frequently not sustained and declined significantly as the pandemic progressed, reverting to pre-pandemic levels within months of the initial outbreak (Daly & Robinson 2022, Robinson et al., 2022, Bartels et al., 2021, Fancourt et al., 2021). Longitudinal studies conducted at this site noting a relatively low level of symptoms and a minimal impairment (with individual variation evident) on functioning for individuals with pre-existing anxiety, bipolar and psychotic disorders 6, 12 and 24 months after the onset of the COVID-19 pandemic respectively (McLoughlin et al., 2023, McLoughlin et al., 2022, Rainford et al., 2023, Hennigan et al., 2021, O'Gorman et al., 2024). However, individuals diagnosed with emotionally unstable personality disorder (EUPD) demonstrated at baseline and at similar follow-up periods significant anxiety and depressive symptoms longitudinally (McLoughlin et al., 2022), albeit some improvement in social and occupational functioning and quality of life was noted over time (O'Gorman et al., 2024).

Consequently, in this study we wanted to assess the psychological and social impact of the COVID-19 pandemic over a longer time period (48 months after the initial assessment) for individuals diagnosed with anxiety disorders, bipolar disorder and EUPD. Additionally, we wanted to compare symptoms and functioning across these disorders based on their differing levels symptoms and functioning to date. We hypothesised that participants with EUPD would continue to demonstrate increased symptomatology and lower levels of functioning compared to the other two participant groups, however a reduction in symptom severity and increased functioning compared to earlier studies would be present, given improvements in functioning noted at 24-month follow-up. We additionally wanted to evaluate participants' views on how the COVID-19 pandemic had impacted them both during the pandemic and subsequently.

Methods

Participants

All participants (except one who had died in the interim from a medical illness) who previously engaged a study examining individuals with pre-existing anxiety disorders ($n = 30$) (Plunkett et al., 2021) and who previously engaged a study examining individuals with a pre-existing diagnosis of bipolar disorder ($n = 20$) and EUPD ($n = 16$) (McLoughlin et al., 2022) were invited to participate in a third follow-up visit by letter and subsequently phoned to provide clarification regarding the purpose of and procedure associated with this study. Anxiety disorders included generalised anxiety disorder, obsessive-compulsive disorder (OCD), social phobia and agoraphobia and panic disorder. This longitudinal study examined participants who engaged in the initial studies between April 20 and June 26 2020, approximately 5-12 weeks after governmental mandated restrictions had commenced (Plunkett et al., 2021, McLoughlin et al., 2022).

Inclusion and exclusion criteria have previously been detailed (Plunkett et al., 2021, McLoughlin et al., 2022) and included being over 18 years of age and having capacity to provide written informed consent for study participation. Exclusion criteria included participants having an intellectual disability (IQ < 70), or a diagnosis of dementia, expressing suicidal ideation with intent or experiencing a manic or severe depressive episode. Clinical diagnoses were based on ICD-10 diagnostic criteria and were reviewed and confirmed by a senior clinician prior to initial study participation. Participants fulfilled criteria for only one of the three disorders (bipolar disorder / EUPD / an anxiety disorder). All participant responses were anonymised, and all participant data stored securely and handled in accordance with the Data Protection Act, 2018. On the case report file for participants, patients were not identified by their names but by an identification code, with consent forms located securely and separately to paper records. Ethical approval was attained prior to study commencement from the Galway University Hospitals Research Ethics Committee (C.A. 2350 and C.A. 2362).

Procedure

All individuals previously provided written informed consent and consent was re-attained verbally for this study. Clinical case notes were reviewed to ascertain any changes relating to clinical data, including changes in prescribed psychotropic medications, when participants were uncertain of their treatment regimen.

Assessments

Research interviews were undertaken by psychiatrists with several years of clinical practice (BOM, PA, BH), with training in study procedures provided by the principal investigator (BH) by telephone between September 15th 2023 and March 14th 2024. Demographic data and clinical variable data related to physical health status, including COVID-19 diagnosis and testing status were collected.

Established psychometric instruments with established high reliability and validity indices were utilised in this study and included the: (1) Beck Anxiety Inventory (Steer et al., 1993), (2) Beck Depression Inventory (BDI) (Beck et al., 1996), (3) Hamilton Anxiety Rating Scale (Hamilton 1959), (4) Clinical Global Impression-Severity (Guy 1976), (5) Global Assessment of Function (Hall 1995), (6) the Barratt Impulsiveness Scale (BIS) (Stanford et al., 2009), (7) the Beck Hopelessness Scale (Beck et al., 1974) and (8) the Yale-Brown Obsessive Compulsive Scale (Goodman et al., 1989) (for participants with a diagnosis of OCD only ($n = 9$)).

Likert scales data (0–10) was utilised 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 (see Appendix 1). This previously employed Likert scale data had been collected at all three previous data collection points with the anxiety disorder cohort and at the first and third data collection point for the bipolar disorder and EUPD participant cohorts. Participants were additionally invited to provide free-text data on their perspectives on the impact of the COVID-19 pandemic. This included a number of prompts pertaining to potential adverse and beneficial impacts of the COVID-19 pandemic including social and occupational impacts (Appendix 2).

Statistical analysis

Statistical analysis was performed using the Statistical Package for Social Sciences (SPSS) 27.0 for Windows (SPSS Inc., IBM, New York, USA). For key demographic and clinical data, descriptive analysis (frequencies, percentages, means and standard deviations) was performed for categorical and continuous variables as appropriate. Repeated measures analysis of co-variance (Wilks-Lambda statistic) was utilised to compare psychometric data

Table 1. Patient demographics *Includes social phobia, agorapohobia, and mixed anxiety/depression **Includes fatigue, prolonged cough or other respiratory issues

Variable	n (%)
Gender	
Male	15 (28.8)
Female	37 (71.1)
Primary Diagnosis	
Bipolar Disorder	18 (34.6)
Emotionally Unstable Personality Disorder	13 (25.0)
Obsessive Compulsive Disorder	9 (17.3)
Generalised Anxiety Disorder	8 (15.4)
Other Anxiety Disorder*	4 (7.7)
COVID-19 History	
History of infection	40 (76.9)
Vaccinated at least once	49 (94.2)
Hospitalised due to COVID-19	2 (3.8)
Post-COVID-19 symptoms**	7 (13.5)
Co-morbid physical illness	
Diabetes mellitus	6 (11.5)
COPD/Asthma	4 (7.7)
Immunocompromised (due to illness or medication)	5 (9.6)
Chronic pain	5 (9.6)

between baseline and follow-up visits. Post-hoc data to examine differences between groups was undertaken utilising analysis of variance, with the Wilcoxon ranked test utilised for non-parametrically distributed data. Paired *t*-test were utilised for parametric data to compare baseline data and follow-up psychometric Likert scale data to assess any changes, with the Chi Square (χ^2) or Fisher's Exact Test also utilised for non-parametric data as appropriate. All statistical tests were two-sided and the α-level for statistical significance was set at 0.05.

Free-text data were obtained from participants and were open-coded and based upon 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 using a thematic analysis approach by the consensus of the researchers (BOM, BH).

Results

Demographic and clinical data

Of the 66 participants who participated in the initial studies, 52 participants (78.8%) were available for a follow-up interview at the fourth data collection point (anxiety disorders = 21, bipolar disorder = 18, EUPD = 13). Demographic and clinical data pertaining to these study participants are presented in Tables 1 and 2. The EUPD group had a lower average age (mean = 32.5 (SD = 10.9)) compared to the bipolar (mean = 48.6, SD = 16.8) and anxiety disorder (mean = 42.7 (SD = 13.7)) groups (F = 4.8, p = 0.013) with a difference in gender between the groups also evident (i.e. EUPD = 100% female; F = 8.4, p = 0.016). Fifty (96.2%) participants were prescribed psychotropic medication and 27 (53.8%) participants were prescribed more than one

Table 2. Patient characteristics by disorder statistically significant results are in bold EUPD = emotionally unstable personality disorder

	Bipolar Disorder (n = 18)	EUPD (n = 13)	Anxiety Disorders (n = 21)	Statistics
	n (%)	*n* (%)	*n* (%)	**x, p / F, p**
Gender: Female	12 (66.7)	13 (100.0)	9 (42.9)	**8.4, 0.016**
Age: Mean (SD)	48.6 (16.8)	32.5 (10.9)	42.5 (13.7)	**4.8, 0.013**
Employment Status				
Employed	10 (55.6)	9 (69.2)	10 (47.6)	2.9, 0.634
Unemployed	6 (33.3)	4 (30.8)	10 (47.6)	
Retired	2 (11.1)	0 (0.0)	1 (4.8)	
Lost job during pandemic	3 (16.7)	2 (15.4)	2 (9.5)	
Substance Usage (at least monthly)				
Alcohol	10 (55.7)	7 (53.8)	5 (23.8)	4.9, 0.94
Cigarettes	6 (33.3)	7 (53.8)	4 (19.0)	4.3, 0.11
Cannabis	0 (0.0)	3 (23.1)	1 (4.8)	4.7, 0.08
Relationship status				
Single	8 (44.4)	7 (53.8)	12 (57.1)	1.46, 0.88
Married or partnership	5 (27.8)	4 (30.8)	6 (28.6)	
Separated	5 (27.8)	2 (15.4)	3 (14.3)	
Living status				
Parents	2 (11.1)	1 (7.7)	7 (42.9)	4.8, 0.597
Family	4 (27.8)	4 (7.7)	5 (38.1)	
Alone	8 (44.4)	6 (46.2)	6 (28.6)	
Housemates	3 (16.7)	2 (15.4)	2 (9.5)	
Dissatisfied with support from mental health service during the pandemic	3 (16.7)	8 (61.5)	4 (19.0)	**8.1, 0.018**
Psychotropic medication(s)				
SSRI	0 (0.0)	3 (23.1)	9 (42.9)	
Other antidepressant	0 (0.0)	1 (7.7)	2 (9.5)	
Antipsychotic	2 (11.1)	1 (7.7)	0 (0.0)	
Mood stabiliser	3 (16.7)	0 (0.0)	0 (0.0)	
Other medication	0 (0.0)	0 (0.0)	2 (9.5)	
Multiple psychotropic medications	13 (72.2)	8 (61.5)	6 (28.6)	
No medication	0 (0.0)	0 (0.0)	2 (9.5)	

psychotropic medication. There was no difference noted in the rates of covid infection or vaccination rates between the three groups, nor was any difference noted in the rates of prolonged somatic symptoms as a result of a COVID-19 infection.

Psychometric data

Table 3 and Figures 1 & 2 summarise the scores, at each survey time point, on psychometric rating and Likert scales for each of the three cohorts. At all four time points, mean anxiety symptoms (BAI)

Table 3. Mean values for all psychometric instruments across the study time-points

| Variable	Anxiety Disorders				BPAD				EUPD			
	Timepoint 1 Mean (SD)	Timepoint 2 Mean (SD)	Timepoint 3 Mean (SD)	Timepoint 4 Mean (SD)	Timepoint 1 Mean (SD)	Timepoint 2 Mean (SD)	Timepoint 3 Mean (SD)	Timepoint 4 Mean (SD)	Timepoint 1 Mean (SD)	Timepoint 2 Mean (SD)	Timepoint 3 Mean (SD)	Timepoint 4 Mean (SD)
BAI	12.7 (13.5)	15.6 (13.1)	15.9 (14.0)	16.3 (11.9)	13.7 (12.8)	13.7 (12.1)	12.7 (10.3)	12.1 (10.1)	39.6 (11.8)	38.7 (15.0)	35.3 (14.8)	27.3 (15.5)
HARS	11.8 (8.6)	11.84 (8.8)	13.63 (11.9)	9.0 (7.3)				5.8 (5.7)				12.8 (6.7)
BDI				11.1 (10.0)	9.4 (7.9)	11.20 (8.1)	12.5 (9.9)	6.9 (4.5)	31.1 (10.3)	26.0 (13.2)	24.6 (12.5)	23.6 (12.2)
GAF	60.2 (2.7)	60.8 (2.6)	65.1 (2.4)	67.1 (11.8)				67.8 (18.9)				64.0 (10.5)
CGI												
Severity	4.4 (0.9)	4.3 (0.9)	4.2 (1.0)	4.0 (1.2)				3.3 (1.0)				3.8 (1.1)
Improvement	4.8 (0.3)	5.1 (0.2)	4.6 (0.3)	3.9 (1.2)				4.2 (1.3)				5.3 (1.7)
BHS	-	–	–	5.9 (5.5)	3.5 (3.6)	3.47 (3.40)	4.54 (3.57)	3.4 (2.4)	13.19 (5.0)	11.3 (4.9)	10.3 (5.4)	8.6 (5.5)
BIS			–	53.9 (13.2)	60.3 (10.2)	62.3 (11.5)	64.7 (10.4)	58.7 (9.7)	76.4 (15.3)	67.3 (15.2)	67.0 (15.3)	70.1 (16.7)
Likert scales			–									
Anxiety	4.1 (3.1)	3.9 (2.8)	3.0 (2.6)	2.1 (2.6)	2.7 (2.9)		2.1 (2.7)	2.28 (2.42)	6.44 (3.1)		5.6 (2.7)	5.2 (3.1)
Mood	3.2 (0.7)	3.2 (0.6)	2.2 (0.6)	1.8 (2.4)	2.2 (2.9)		1.61(2.3)	2.06 (2.44)	6.13 (2.8)		4.6 (2.6)	5.1 (3.5)
Social function	4.8 (2.9)	4.3 (2.9)	3.6 (3.1)	2.3 (2.33)	3.0 (3.7)		1.3 (1.3)	2.78 (3.3)	6.81 (3.3)		1.9 (1.6)	4.5 (3.7)
Occupational function	2.6 (0.8)	2.6 (0.7)	1.6 (0.6)	1.2 (1.4)	4.6 (4.3)		2.8 (2.7)	1.22 (2.29)	5.75 (4.2)		3.4 (3.2)	2.9 (3.0)
Quality of Life	4.75 (0.52)	4.15 (0.63)	3.1 (0.62)	1.67 (2.03)	3.20 (2.96)		1.28 (1.41)	1.06 (2.1)	6.38 (2.9)		2.4 (1.9)	4.2 (3.6)
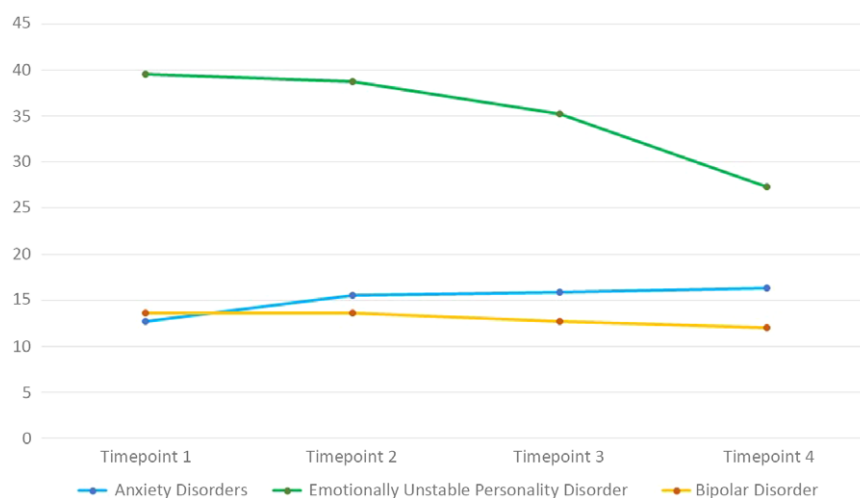
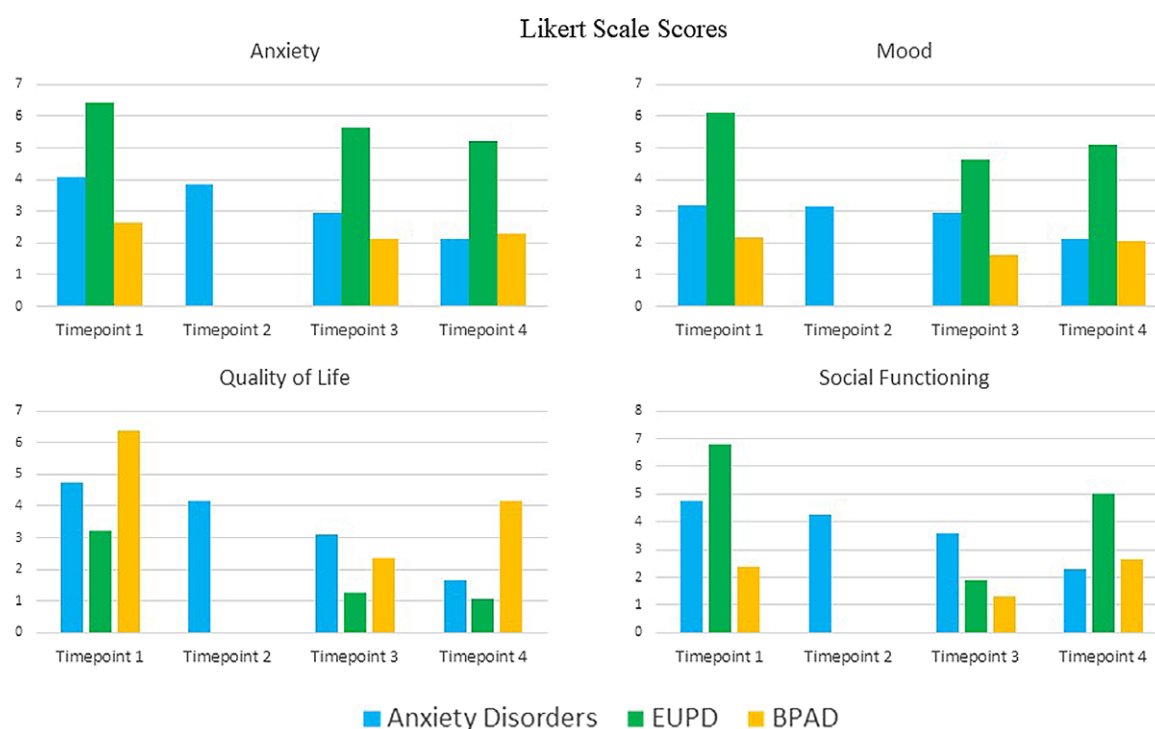**Figure 1.** Beck's anxiety inventory scores for each disorder by time point.

Figure 2. Likert scales scores for each disorder by timepoint.

were higher in the EUPD compared to the bipolar and anxiety disorder groups (F range 8.76–18.90, $p \leq 0.001$), with repeated measures data assessing individuals with data at each time point supporting this finding ($F = 9.63$, $p = 0.001$) (see Figure 1). Hopelessness (BHS) ($F = 4.6$, $p = 0.014$), impulsivity (BIS) ($F = 6.2$, $p = 0.004$) and depressive symptoms (BDI) ($F = 19,5$, $p < 0.001$) measured in all three groups demonstrated higher scores in the EUPD cohort compared to both bipolar and anxiety disorders at time-point 4, with greater symptoms noted for both depressive symptoms and impulsivity in the EUPD compared to the anxiety disorder groups at all time points (BDI at time points 1 and 3, BAI at time points 1, 2 and 3) as previously reported ($p < 0.01$ for all analyses). Participants with EUPD also scored

higher in hopelessness over all four time points compared to participants with bipolar disorder ($F = 3.034$, $p = 0.044$).

Differences between males and females in psychometric scale scores at all time points were assessed for any significant difference, and only BDI at time point 1 noted a difference ($t = 2.58$, $p = 0.015$).

Likert scale data

When compared to the anxiety disorder group at the third follow up survey, participants with EUPD reported a more deleterious impact of the COVID-19 pandemic in all five aspects compared to the anxiety disorder cohort ($p < 0.05$). Compared with the bipolar

disorder cohort at the third follow-up survey, participants with EUPD reported a more deleterious effect on their anxiety ($t = 2.84$, $p = 0.008$) and mood symptoms ($t = 2.67$, $p = 0.25$), social functioning ($t = 2.18$, $p = 0.034$) and quality of life ($t = 2.77$, $p = 0.14$). There was no difference reported in any of the five aspects between participants with bipolar disorder and participants with anxiety disorders.

Likert Scale data at time point 4 noted an increased impact for anxiety symptoms ($F = 6.1$, $p = 0.004$), mood symptoms ($F = 6.6$, $p = 0.003$), social functioning ($F = 4.2$, $p = 0.02$) and quality of life ($F = 6.1$, $p = 0.004$) for EUPD participants compared to individuals with bipolar or anxiety disorders. Repeated measure (Wilke's lambda analysis) data demonstrated a greater deleterious impact of the COVID-19 pandemic on social functioning ($F = 4.3$, $p = 0.02$) and quality of life ($F = 13.3$, $p < 0.001$) in the EUPD compared to the bipolar and anxiety disorder groups.

EUPD participants reported higher levels of dissatisfaction with mental health service delivery during the COVID-19 pandemic ($n = 8$, 61.5%) compared to the bipolar ($n = 3$, 16.7%) and anxiety disorder ($n = 4$, 19.0%) groups ($F = 8.1$, $p = 0.018$).

Qualitative data (Table 4)

The 52 participants at time point 4 provided 158 separate comments. Nine themes emerged pertaining to the impact of COVID-19 on health or functioning encompassing 118 of these comments. Four of these were negative and included: (1) isolation during the COVID-19 pandemic ($n = 22$), (2) deleterious impact on symptoms (anxiety, mood, suicidal ideation, etc.) during the COVID-19 pandemic ($n = 14$), (3) on-going adverse impact on social functioning ($n = 9$) and symptomatology ($n = 8$), (4) Inability to take part in previously enjoyed activities ($n = 8$). Three positive themes also emerged and included greater connection with family members and neighbours/friends ($n = 19$), a new appreciation of hobbies or nature ($n = 13$), and being able to focus on previously neglected aspects of life ($n = 10$). The final two themes related to COVID-19 having no significant impact on individuals ($n = 10$) and that access to some health services was sub-optimal ($n = 15$).

Discussion

To our knowledge, this is the first longitudinal study that has assessed the impact of the COVID-19 pandemic and its mandated restrictions for individuals with a range of mental health disorders attending a secondary mental health service over an extended time period. We evaluated anxiety and depressive symptoms, functioning and quality of life in participants at four time points over a 4-year period since the onset of the COVID-19 pandemic and qualitative data revealed a variety of unique experiences of the pandemic. Although significant individual differences were evident, participants in the EUPD group consistently reported both higher levels of symptomatology and a greater deleterious impact of the COVID-19 pandemic on their symptomatology, social functioning and quality of life compared to individuals with either bipolar disorder or an anxiety disorder. Furthermore, only modest reductions in symptoms (non-significant) over-time were noted in this cohort.

The putative reasons for increased symptomatology and disproportional distress for individuals with EUPD are manifold. The public health measures enforced in many countries have been shown to most effect those who endorse a sense of isolation (Henssler et al., 2021), and thus likely impacted a greater

Table 4. Themes emanating from free-text responses free-text data themes

Adverse impacts of the COVID-19 pandemic
Theme 1: Isolation ($n = 22$)
- *"It should have been a great time in my life being in college, but I couldn't go to see anyone"* (#31, Male, Bipolar Disorder)
- *"It was terrible. I was in college and couldn't go in and couldn't meet people."* (#43, Female, EUPD)
- *"I couldn't visit my friends and I couldn't visit my mother's grave. That was hard"* (#47, Female, EUPD)

Theme 2: Deleterious impact on symptoms during the pandemic ($n = 14$)
- *"At the start I was wondering was it real [or if it was psychosis]"* (#22, Male, Bipolar Disorder)
- *"The isolation and fear-mongering by the media made me more anxious"* (#31, Male, Anxiety Disorder)

Theme 3: Ongoing effect on symptomatology and functioning ($n = 17$)
- *"I have developed agoraphobia, COVID destroyed what little routine I had"* (#48, Female, EUPD)
- *"I lost contact with friend and haven't made new friends since then. I have not been able to come out of my shell"* (#25, Male, Bipolar Disorder)

Theme 4: Inability to partake in previously enjoyed activities ($n = 8$)
- *"I had to leave a job I loved because work told me I couldn't be around people [due to underlying health condition]"* (#9, Female, Anxiety Disorder)
- *"Tennis is how I unwind. It was frustrating not being able to play, it was a safe activity"* (#19, Male, Bipolar Disorder)

Benefits of the COVID-19 pandemic
Theme 1: Greater connection with family members and neighbours/friends ($n = 19$)
- *"I got to spend more time with children which was lovely and helped my mood"* (#22, Male, Bipolar Disorder)
- *"It was good to be able spend more time with my family. Everyone was at home and in good form. We're closer now"* (#29, Male)

Theme 2: A new appreciation of hobbies or nature ($n = 13$)
- *"I think it might have improved my socialising, because now I want to go out and do stuff, like out in nature. I appreciate my friends and hobbies more"* (#45, Female, EUPD)
- *"I loved being in lockdown. I didn't have to deal with people, and people didn't come near me. I could go out on long walks which made me appreciate how beautiful our country is"* (#1, Male, Anxiety Dosorder)

Theme 3: Ability to focus on previously neglected aspects of ($n = 10$)
- *"Because everything being closed meant I couldn't spend, I was able to clear debts which were weighing on me for a long time"* (#27, Female, Bipolar Disorder)
- *"People were putting a lot of importance on being healthy, so I started to exercise more. I'm really happy with how much healthier I am now"* (#7, Male, Anxiety Disorder)

Lack of major impact of the pandemic ($n = 10$)
- *"Having mental health difficulties before, you were more prepared for it"* (#5, Male, Anxiety Disorder)
- *"I was so unwell at the time, I wasn't leaving the house anyway, it made no difference"* (#38 Male, Bipolar Disorder)

Suboptimal access to mental health services ($n = 15$)
- *"I started self harming more because I couldn't distract myself and I couldn't get support"* (#41, Female, EUPD)
- *"The services weren't okay. I felt forgotten about. I wasn't seen for ages"* (#44 Female, EUPD)

proportion of individuals with a diagnosis of EUPD, given their greater sensitivity to feelings of emptiness, fears of abandonment (Fonagy & Bateman 2008) and thwarted desired closeness (attachment) (Ikhtabi et al., 2022). In this longitudinal study, participants with EUPD consistently identified a statistically larger impairment on social functioning as a result of the COVID-19 pandemic compared to the other two participant groups, which would exacerbate any pre-existing interpersonal difficulties experienced (Skodol et al., 2005). These findings were also evident in the qualitative data where participants (particularly but not exclusively with EUPD) described isolation (Table 4) and distress secondary to the COVID-19 pandemic and associated mandated restrictions. The deleterious impact of the COVID-19 pandemic on

mental health delivery (both within and outside mental health services) likely had a disproportionate impact for individuals with EUPD, given that many of the evidence based therapeutic interventions are predominantly group-based in nature (i.e. Decider Skills Therapy, Dialectical Behaviour Therapy, Mentalisation Based). In addition to this reduction of therapeutic input, increased feelings of abandonment (particularly where face-to-face therapeutic sessions were also unavailable) were also likely disproportionately experienced by this participant cohort. In support of these assertions, it was notable that individuals with EUPD expressed greater dissatisfaction with the supports offered by the mental health services during the COVID-19 pandemic, compared to the other two groups.

The bipolar group in our study showed a relatively benign impact of the COVID-19 pandemic on longitudinal symptomatology. Our findings are in keeping with previous literature which indicated that patients with bipolar disorder have demonstrated significant resilience to the COVID-19 pandemic (Kunzler et al., 2023). One potential explanation is that participants with bipolar disorder would have continued to receive close to their usual level of input from community team members (e.g. medical reviews, blood tests, psychotropic medication administration) and would have been less likely to be affected by the removal of group-based interventions. Additionally, individuals with severe mental illness display significant qualities of resistance, which likely could bolster them against the potential stress of the pandemic and its sequelae. A previous cross-sectional and longitudinal studies (Fahy et al., 2021, Rainford et al., 2023, Kunzler et al., 2023) evaluating individuals with treatment-resistant schizophrenia, similarly demonstrated both a minimal impact on symptomatology (anxiety symptoms) and functioning. Lastly, the bipolar group was, on average, 16 years older than the EUPD group, with older age noted to have been associated with lower levels of distress arising from the COVID-19 pandemic, despite the potential greater risk of more severe COVID-19-related infections (Bruine de Bruin 2021, Wilson et al., 2021).

Our cohort of participants with anxiety disorders also displayed relative resilience to the mental health effects of the COVID-19 pandemic. This was evident at all four time points and is in keeping with previously reported longitudinal studies (Kunzler et al., 2023). A potential explanation for the limited deleterious effect (albeit significant individual differences were noted) of the COVID-19 pandemic may relate to a welcome reduction in social interactions, which can be anxiety-inducing for this participant cohort (Ahrens et al., 2021). Qualitative data supported this potential explanation, with a number of patients noting benefits (symptomatic and functional) from the reduced social interactions related to the COVID-19 pandemic. Indeed, although non-significant, lower levels of symptoms and a reduced impact of the COVID-19 pandemic were evident at time point 4 for this cohort, suggesting the initial distress caused by adjustment to the onset of the COVID-19 pandemic had dissipated. This was not a universal finding as noted by qualitative data, which suggested that some participants believed they functioned more optimally, and were less distressed prior to a discontinuation of the mandated COVID-19-related restrictions.

There are a number of limitations with this study, the most significant of which being the modest sample size. However, 78.8% ($n = 52$) of the original cohort engaged in this phase of this longitudinal study and there was no difference in clinical or demographic factors between those who did and did not participate. We used unvalidated Likert scales, however similar scales have been widely used in previous studies. Likewise, although the psychometric instruments utilised have high reliability and validity indices, they were subjectively completed, and may be associated with higher levels of response bias compared to objective psychometric scales. The cross-sectional design of this study meant that psychometric scales were sensitive to fluctuations secondary to environmental factors, e.g. one participant had recently become engaged and expressed that their functioning had improved and symptomatology had reduced secondary to same. Additionally, the cross-sectional time points differed significantly for time point two (for the anxiety disorder group compared to the EUPD/bipolar disorder groups). All participants in this study were initially recruited from a city-based community mental health team, which limits its external validity. We asked for patients to recall events from several years prior to interview, and so their recollections may have been susceptible to recall bias. Psychometric instruments to measure symptoms and functioning would have been employed prior to the onset of the COVID-19 pandemic to help further elucidate the impact of the COVID-19 pandemic. We did not collect data pertaining to illness episodes in this study (i.e. (hypo)manic or depressive episodes or periods of exacerbations of symptoms of anxiety disorders). Finally, participants in this study were diagnosed utilising ICD-10 criteria. Since the onset of the study, ICD-11 diagnostic criteria have been introduced. Consequently, participants diagnosed with EUPD included in this study would fulfil criteria for a personality disorder of moderate to severe severity with the trait domain of disinhibition and a pattern specifier of 'borderline pattern'.

Conclusions

Over a period of 4 years, individuals with a diagnosis EUPD consistently reported a greater impact on their mental health symptoms, functioning and quality of life as a result of the COVID-19 pandemic. This may be due to the differing interaction of the pandemic's restrictions on the needs and symptoms of these cohorts of patients.

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