



Volume 2 | Issue 7 | 2023

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The Effect of Affective Temperaments on Suicidal Ideation and Behaviours in Patients with Mood Disorders

Introduction:

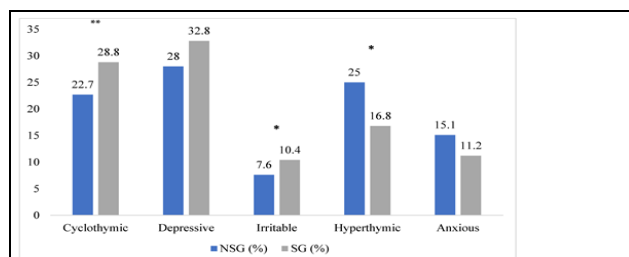
One of the most serious public health issues and a frequent cause of medical emergencies is suicide. Bipolar disorder (BD) and major depressive disorder (MDD) have both been linked to an increased risk of suicide. Individual personality traits and affective temperaments may contain additional suicide risk factors ⁽¹⁾. Affective temperaments(AT) includes: hyperthymic temperament, anxious disposition, depressive temperaments, cyclothymic disposition, irritable disposition. The purpose of this study is to investigate the connection between affective temperaments and suicidality, including the lifetime onset of suicidal ideation, the lifetime presence of suicide attempts, and the total number of suicide attempts over the course of a person's life ⁽²⁾.

Methods:

This was a multicentric observational study. The diagnosis of bipolar (55.7%), unipolar (35.8%), or cyclothymic disorder was found in 653 of the recruited individuals. Individuals with DSM-5 criteria for having a primary diagnosis of BD, MDD, or cyclothymic disorder and ranged in age from 18 to 65 taking medication for bipolar disorder or major depressive disorder in accordance with the most recent NICE guidelines were selected for the study. The Columbia Suicide Severity Rating Scale and the short version of TEMPS-M (The short version of the Munster Temperament Evaluation of the Memphis, Pisa, Paris and San Diego) were provided to patients. On a scale from 1 (wish to be dead) to 5 (active suicidal ideation with a specific plan and intent), each person's suicidal thoughts are rated.

Results:

Out of 653 patients in this sample, 125 individuals had tried to suicide at least once in their lives. The majority of patients in the suicidal group (SG) were women (62.4%), the mean age was 44.8 ± 13.9 , and the average level of education was 13.4 ± 3.5 . The majority of patients in the non-suicidal group (NSG) were women, with an average age 31.8 ± 13 years. The majority of patients (28.9%) displayed a temperament that was



Distribution of suicide attempts lifetime among affective temperaments. * $p < 0.01$; ** $p < 0.001$; NSG: non suicidal group; SG: suicidal group.



depressive, followed by a cyclothymic (23.9%), hyperthymic (23.4%), anxious (14.4%), and irritable (8.1%) disposition. Cyclothymic unstable attitude was more connected with self-destructive ways of behaving (28.8% versus 22.7%, $p < 0.001$), alongside irritable temperament (10.4% versus 7.6%, $p < 0.01$). On the other hand, the hyperthymic group had significantly fewer patients who engaged in suicidal thoughts (25% vs. 16.8%, $p 0.01$). Patients with trait-related impulsivity ($p 0.0001$), poor free-interval functioning ($p < 0.05$), a higher number of affective episodes ($p < 0.01$), a higher number of hospitalizations ($p < 0.0001$), and cyclothymic and irritable affective temperaments ($p < 0.05$ and $p < 0.05$, respectively) were found to have a higher prevalence of lifetime suicide behaviours, according to regression models.

Discussion:

Lower Hyperthymic temperament is strongly associated with a lower risk of suicide. These results are consistent with previous studies, which suggested that a hyperthymic temperament could reduce the risk of suicide. People with hyperthymic temperaments typically have higher levels of drive, energy, and ambition. They also have better coping skills and lower rates of suicidal behaviour ⁽²⁾. Similarly, study carried out by Lu Yin et al., which show that low ratings of hyperthymic disposition are also associated with higher levels of hopelessness and negative attitude regarding life ⁽³⁾.

The findings of the study indicate that higher levels of impulsivity may be a significant factor in mood instability, which has a negative impact on patients' abilities to effectively manage stressful situations. Other characteristics were found to have a strong connection to suicidality are the total number of affective episodes, impaired psychosocial functioning during euthymic phases, and a higher number of previous psychiatric hospitalizations are among them ⁽²⁾. In addition, Jingxuan Zhang et al. concludes that impulsive individuals are more likely to suffer from depression, and that depressed individuals are even more likely to develop suicidal thoughts ⁽⁴⁾.

Conclusion:

The present study's findings confirm that patients with affective disorder have a strong connection between various aspects of suicidality, affective temperaments, and other psychopathological dimensions. The findings of the study conclude that people with MDs(Mood Disorders) who exhibit cyclothymic or irritable behavior are more likely to attempt suicide. On the other hand, the hyperthymic disposition prevents the development of suicidal thoughts and actions.



The study's findings are evident that people with mood disorders who exhibit cyclothymic or irritable behaviour are more prone to attempt suicide. The hyperthymic disposition, however, prevents the development of suicidal thoughts and actions.

Reference:

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The psychiatric and non-psychiatric correlates of tobacco use in those with bipolar disorder.

Introduction:

Bipolar I disorder is a serious chronic psychiatric condition characterized by the occurrence of one or more manic episodes. Medical and psychological comorbidity have consistently been linked to severe levels of bipolar I disorder ⁽¹⁾. Patients with serious psychiatric illness are more likely to smoke tobacco than the general population does, and clinicians must take smoking into account during calculating dose of a medications because it increases the clearance rate ⁽²⁾. Smoking increases the risk of suicidal behaviour carried by those with BD, and it is linked to more frequent sleep disturbances, anger, impulsivity, and emotional lability, all of which can worsen the course of BD. The objective of this study was to characterize the psychiatric and non-psychiatric correlates of tobacco smoking status in individuals with BD ⁽³⁾.

Methods:

People with known BD were recruited into the network of Fundamental specialist centres for BD and divided into three groups: present, past, and never smokers. Univariate multinomial logistic regression models were used to assess the association between independent variables and smoking status. The never-smoker group served as the comparison group, and used multinomial regression logistic models to examine the sociodemographic and clinical characteristics of the three groups as measured by standard instruments. Multiple testing corrections were used. Post hoc corrections were employing by two techniques: The Bonferroni correction for pairwise comparisons and Benjamini-Hochberg correction for significant p-values across the three smokers' groups, resulting in $p = 0.05/3 = 0.016$ for significance. The analyses were carried out using the SPSS program (26.0.0.0; IBM SPSS Statistics for Windows; Armonk, NY: IBM Corp.) and R software.

Results:

The difference between former and never smokers was not statistically significant, but BD-1 was preferentially associated with current smoking when compared to never smokers ($p = 0.006$) and showed a younger age at onset of BD than both never- and former smokers ($p = 0.001$) and former smokers (OR = 1.4, 95% CI = 1.1;1.7, p-value = 0.04).

With odds ratios ranging from 2.5 (other SUDs, former smokers vs. never-smokers) to 3.3 (present smokers), there was a gradient towards increasing prevalence of each concomitant SUD (substance



use disorders) (other SUDs, current vs. never-smokers). Table 1 shows that all paired tests were significant, with the exception of the SUD between present and past smokers.

In addition to having greater levels of comorbid drug use disorders with a gradient from never to former to current smokers, current smokers also exhibited higher levels of depression, anxiety, and impulsivity than former and never smokers. Current smokers were more likely than never smokers to develop the metabolic syndrome, however this was only shown in cases when antipsychotics were not being used.

Table 1: Comorbid SUDs (substance use disorder) as a function of tobacco smoking status

	Never – smoker 1529 (42.2%)	Former smoker 416 (11.5%)	Current smoker 1680 (46.3%)	Global p-value	Former vs never smoker		Current vs former smoker		Current vs never smoker	
	N (%) or mean (SD)				OR(95% CI)	P value	OR	P value	OR	P value
Alcohol use disorder	172(12.7)	110(28.5)	552(37.4)	<0.001	2.74 [2.09; 3.6	<0.00 1	1.5 [1.18;1.9 2]	0.003	4.12 [3.4; 4.99]	<0.00 1
Cannabis use disorder	64 (4.7)	72(18.7)	507(34.4)	<0.001	4.63 [3.23; 6.63]	<0.00 1	2.28 [1.74;3.0 3]	<0.001	10.6 [8.05; 13.9]	<0.00 1
Sedative use disorder	44(3.2)	25(6.5)	81(5.5)	0.003	2.07 [1.25; 3.42]	0.005	1.19 [0.75; 1.89]	0.46	1.73 [1.19; 2.52]	0.004
Other substance use disorder	37(2.7)	33(8.5)	33(12.6)	<0.001	3.33 [2.05; 5.41]	<0.00 1	1.54 [1.05; 2.28]	0.03	5.14 [3.59; 7.38]	<0.00 1

Discussion:

The current study specifically examined the lifetime tobacco smoking status of participants, examining former smokers from the two other groups individually, and its correlation with BD. Study look into correlations with a variety of clinical traits, metabolic and biochemical factors, and smoking status. Only 19.8% of the people in BD had given up smoking, which is only half the rates reported in the general population. As for the risk of concomitant SUDs, there was an increasing gradient from



never smokers through former smokers to current smokers ⁽³⁾. In a similar study conducted by Vestergaard JH et al. concludes that, BD continues to be a risk factor for current smokers compared to those who are not affected and almost two-fold increased risk of admission to a psychiatric hospital with either depression, anxiety or bipolar disorder in patients with consistent smoking compared to ex-smokers ⁽⁴⁾.

Conclusion:

This study emphasizes the importance of encouraging BD patients to quit smoking. Patients with BD are expected to benefit from quitting smoking in terms of their psychiatric and metabolic health and quitting smoking may be more difficult for the most severe patients.

In terms of psychiatric and metabolic health, patients with BD are expected to benefit from quitting smoking, though the most severe cases may find it more challenging to quit smoking.

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Associations between common and rare variants and the latent traits underlying schizophrenia, bipolar disorder, and depression

Introduction:

Psychiatric disorders like major depression, schizophrenia, and bipolar disorder are debilitating diseases that impair people's ability to function normally. They are heritable, that some of the variation in the risk of developing these disorders can be attributed to genetic variation⁽¹⁾. Studies on twins and families suggest that psychiatric disorders are highly heritable. candidate gene studies, or studies based on a priori knowledge of a gene's function, linked with schizophrenia or bipolar disorder through linkage studies were normal until genome-wide association studies (GWAS), which examine potential risk gene variants across the entire genome was introduced. The GWAS's capacity to identify risk variants regardless of prior hypotheses is undoubtedly one of its greatest advantages⁽²⁾.

Methods:

The Mental Health Questionnaire (MHQ) in the UK Biobank contains data relating to current and lifetime symptoms of psychiatric disorders that match the DSM-V and ICD-10 criteria relevant to three psychiatric disorders: major depression (N = 134,463), bipolar disorder (N = 117,376), and schizophrenia (N = 130,013), using data from this questionnaire to investigate latent traits underlying psychiatric symptoms using a pre-registered analysis and determined the individuals' scores on these latent qualities and tested for single-variant genetic connections (MAF > 0.05%), gene-based burden associations, and pathway associations.

Results:

Latent factor phenotypes were created using data from 157366 participants who completed the Mental Health Questionnaire in order to prepare for further studies and determined the participants scores on these latent traits and tested for single-variant genetic associations (MAF > 0.05%), gene-based burden associations, and pathway associations and looked for genes previously linked to Mendelian disorders with relevant symptoms and genes previously identified by common variant genome-wide association studies that were enriched for rare variants (MAF 0.05–1%). With the fast GWA software, single variant association tests were carried out with a MAF > 0.05% using linear regression adjusted for the first 20 principal components. No single variant met the significance threshold for either the general factor of bipolar disorder or the internalizing general factor of depression. One common SNP,



rs72657988, located on chromosome 1, was connected to a general factor of schizophrenia above the genome-wide significance level ($MAF = 0.0823$, $p = 1.01 \times 10^{-9}$).

	Set tested for enrichment	N genes	Beta	SE	p
GWAS					
General factor of bipolar disorder (Bip)	Mullins et al. (PGC)	126	0.09	0.093	0.16
General factor of schizophrenia (Sch)	Ripke et al. (PGC)	360	0.02	0.055	0.33
Internalising factor of depression (Int)	Wray et al. (only PGC & 23andMe data)	58	-0.03	0.150	0.59
OMIM					
General factor of bipolar disorder (Bip)	Depress* OR mania OR manic	169	-0.07	0.078	0.81
General factor of schizophrenia (Sch)	Schiz* OR psychotic OR psychosis	54	0.20	0.137	0.08
Internalising factor of depression (Int)	Depress*	26	0.11	0.198	0.28
Summary statistics to show results of gene set enrichment analysis of predicted deleterious variants in genes previously associated with matched disorders in GWAS and in genes previously associated with matched phenotypes of Mendelian disorders on OMIM. Minimum MAF = 0.05%, maximum MAF = 1%. N genes = number of genes included in the gene set that was tested for enrichment, Beta = regression coefficient, SE = standard error of the regression coefficient. The asterisk represents the wildcard used for searching for alternative endings of the word, such as "depressive" and "depression", or "schizophrenia" and "schizophrenic".					
Gene set enrichment analysis for GWAS results and Mendelian genes from OMIM					

Matched Mendelian disorders; OMIM (Online Mendelian Inheritance in Man) found loci associated with consistent clinical features of Mendelian disorders (26 loci for depression, 54 loci for schizophrenia, and 169 loci for bipolar disorder). Focusing on rare (MAF 0.05–1%) predicted deleterious variants, there was no enrichment in any of the three groups of common variants previously associated with comorbid disorders.

Discussion:

This study looked at how common and rare variants in the UK Biobank contributed to latent factors derived from symptoms of major depression, schizophrenia, and bipolar disorder. The genetic correlation between the case-control phenotype and the latent trait was low for schizophrenia, moderate for bipolar disorder, and much higher for depression. The case-control depression phenotype and all three latent traits were found to have strong genetic correlations⁽¹⁾. Similarly, Wikus Barkhuizen et al. and Sophie E. Legge et al. conducted a study and discovered stronger genetic correlations between psychotic experiences^(3,4).

Common variants that are associated with a trait's broader phenotype may also be found in genes associated with Mendelian traits. This suggest that Mendelian traits with matched phenotypes and complex phenotypes share a common aetiology due to the functions of genes with these variants⁽¹⁾. Similarly, Malika Kumar Freund et al. also discovered an enrichment of genes associated with Mendelian traits in GWAS of various matched complex disorders⁽⁵⁾.

Conclusion:

This study found moderate genetic correlations between latent traits and case-control phenotypes in previous genome-wide association studies and identified a common genetic variant (rs72657988,



minor Allele frequency = 8.23%, $p = 1.01 \times 10^{-9}$) associated with a common factor in schizophrenia, but no other individual variant, gene, or pathway in this analysis exceeded the level of significance, and no enrichment for genes was found.

In genome-wide association studies, this research discovered modest genetic correlations between latent traits and case-control phenotypes. It also discovered a common genetic variant linked to a

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A case report on Infants with cerebral tuberculoma and convulsions

Introduction:

The Central nervous system tuberculosis is a leading cause of death and morbidity. They account for 10 to 30 percent of the processes of intracranial expansion in developing countries. It is possibly underestimated because 50 percent of the participants don't have symptoms ⁽¹⁾. It prefers regions with a lot of blood supply. Neuroimaging and stereotaxis advancements, as well as the effectiveness of current ant tubercular treatment regimens, have benefited management. This case report describes the case of a 14 month-old child with multiple intracranial tuberculomas ⁽²⁾.

Case Report:

A 14-month-old infant presented with a history of seizures, asthenia, and hypotonia in the last 15 days without fever. He had no prior history of neurodevelopmental disorders or complications during delivery. With a CRP of 17 mg/L and a sedimentation rate of 22 mg/L, revealed a mild elevation in inflammatory markers. Despite the fact that the father was receiving treatment for pulmonary tuberculosis, the infant exhibited no signs of respiratory distress and had a normal chest X-ray. A brain MRI reveals multiple diffuse punctate lesions of the white and gray matter, the majority of which were located in the posterior cerebral fossa and brainstem (fig1). They appeared as hypointense on T1WI and hyperintense on T2WI, solid enhancing nodules (Fig. 2) surrounded by edema, and containing central calcifications (Fig. 1). Child was diagnosed as cerebral tuberculomas because of the seizures, the father's history of pulmonary tuberculosis, and the lesions on the brain MRI. The patient received pyrazinamide and ethambutol for two months and isoniazid and rifampicin for a 12-month.

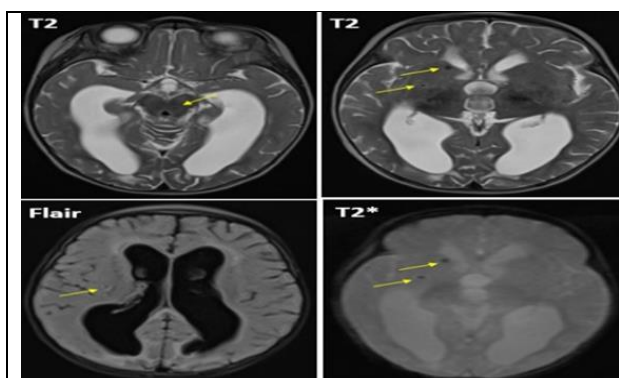


Fig (1). Axial sections of a brain MRI in T2, T2 echo gradient and FLAIR sequence showing the presence of

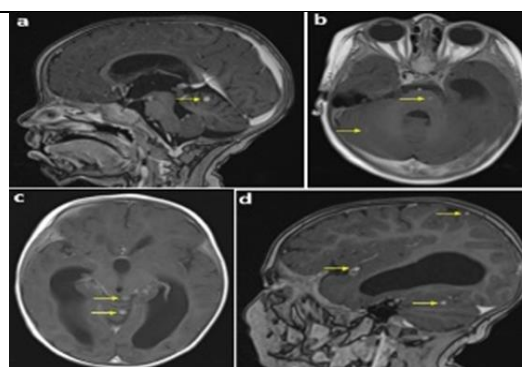


Fig (2). Axial and sagittal sections of a brain MRI in T1 sequence after injection of Gadolinium showing intense



multiple punctate subcortical, supratentorial, and infratentorial lesions	and homogeneous enhancement of lesions predominantly at the sub tentorial level at the level of the vermis
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Discussion:

In developing nations, tuberculosis is a serious issue in terms of public health and it is the main reason for 5 to 30% of intracranial expansive processes. The cerebral hemispheres are the most prevalent location for supratentorial tuberculomas in children. For the detection of tuberculomas and those seen in the brain stem, MRI is more sensitive than scan ⁽³⁾. In a similar study, Patrice Niamien Koffi et al. came to the conclusion that cerebral tuberculomas can develop in any part of the brain. Traditionally, they are supraatentorial in grown-ups and infratentorial in children ⁽⁴⁾.

In this case there is no tuberculoma-specific image on a CT scan. Additionally, MR spectroscopy can be useful in the differential diagnosis process. Multiple diffuse punctiform intraparenchymal lesions surrounded by edema and solid enhancement were observed on MRI in this patient, primarily in the posterior cerebral fossa and the brain stem, indicating solid centers in caseating tuberculomas ⁽²⁾.

Conclusion:

Central nervous system tuberculoma still poses a clinical challenge due to its rarity. A provisional diagnosis is made based on presumptive clinical, biological, and radiological findings, while a definitive diagnosis is made based on histopathological evidence. MRI is a crucial tool for patients with suspected cerebral tuberculoma and it plays a vital role in avoiding misdiagnosis and delayed treatment, both of which contribute significantly to mortality and morbidity. So, patients with brain tuberculomas have a better chance of survival because they can get treatment sooner.

MRI is a vital method for patients with suspected cerebral tuberculoma because it is important to avoid misdiagnosis and delay treatment because both dramatically raise mortality and morbidity.

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