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Author: Wieland, Jannelien

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Chapter 3

Psychiatric disorders in outpatients with borderline intellectual functioning:

Comparison with outpatients from regular
mental health care and outpatients
with mild intellectual disabilities

Jannelien Wieland
Sara Kapitein-de Haan
Frans G. Zitman

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Abstract

Objective In the Netherlands patients with borderline intellectual functioning (BIF) are eligible for specialized mental health care. This offers the unique possibility to examine the mix of psychiatric disorders in patients who, in other countries, are treated in regular outpatient mental health care clinics. Our study sought to examine the rates of all main Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition, Text Revision, axis I psychiatric diagnoses in outpatients with BIF of two specialized regional psychiatric outpatient departments and to compare these with rates of the same disorders in outpatients from regular mental health care (RMHC) and outpatients with mild intellectual disabilities (ID).

Method Our study was a cross-sectional anonymized medical chart review. All participants were patients from the Dutch regional mental health care provider Rivierduinen. Diagnoses of patients with BIF (BIF group; n= 235) were compared to diagnoses of patients from RMHC (RMHC group; n=1026) and mild ID patients (mild ID group; n= 152).

Results Compared with the RMHC group, psychotic and MDD were less common in the BIF group, while posttraumatic stress disorders and V-codes were more common. Compared with the mild ID group psychotic disorders were significantly less common.

Conclusion Mental health problems in people with BIF may be not well addressed in general psychiatry, or by standard psychiatry for patients with ID. Specific attention to this group in clinical practice and research may be warranted lest they fall between two stools.

Introduction

In the International Classification of Diseases, 10th Revision, there is no specific code for it, but in the DSM-IV-TR, as well as in DSM-5, borderline intellectual functioning (BIF) is a V-code that can be used to signify problems associated with subaverage intellectual performance.¹⁻³ These patients function in between people with average or above average intelligence and people with ID. Adults with BIF are believed to suffer from high rates of psychiatric disorders and rely mostly on outpatient treatment.⁴ In most countries they are not considered part of the ID population and are treated in the same clinics as patients without ID. However, it is unknown to what extent the mix of disorders with which they present themselves in mental health outpatient clinics differs from patients without ID. It is also unknown to what extent this mix of disorders differs from patients with lower intelligence quotients (IQs). Most studies in the general population, as well as in outpatients, did not include people with BIF.⁵⁻⁷ This may be important, as the prevalence of mental health disorders has been reported to vary by the severity of the ID.⁸

Unlike most other countries, in the Netherlands, patients with BIF and comorbid psychiatric disorders are eligible for the same specialist psychiatric services as patients with ID. For instance, the Dutch regional mental health care provider Rivierduinen has over 10 years of experience with two outpatient mental health care centres specialized in psychiatry and ID, mainly for patients with BIF and mild ID, apart from outpatient clinics for people without ID. Well established referral pathways and focus on patients with BIF as a separate group made referral of patients with BIF and psychiatric disorders to specialized mental health care the default procedure. Using data from these two specialized outpatient clinics and from a general outpatient clinic of Rivierduinen operating in the same region, we were able to compare psychiatric morbidity of patients with BIF with outpatients from regular mental health care and outpatients with mild ID.

Methods

Participants

Our study was a cross-sectional anonymized medical chart review. All participants were patients from the Dutch regional mental health care provider Rivierduinen. We compared anonymized data of patients from two regional secondary care adult outpatient departments, specialized in psychiatry and ID (CPID; centres for Psychiatry and Intellectual Disability; BIF and mild ID groups) with anonymized data of patients from a regular secondary care outpatient department (Regular Mental Health Care (RMHC) group). The BIF and mild ID groups came from the complete catchment area of Rivierduinen and the RMHC group came from one particular region within this area (Katwijk, Zuid Holland, the Netherlands). Both groups consisted of outpatients registered on January 1, 2011. All diagnoses were the DSM-IV-TR² axis I

diagnoses as recorded in the official registration system of the electronic patient file. In the BIF and mild ID groups diagnoses were based on the integrative approach of Došen.⁹⁻¹¹ For people with ID, the integrative diagnosis considers the developmental perspective as the fourth dimension in addition to the biopsychosocial model. In daily clinical practice this means that in order to consider all four dimensions, patients are always assessed multidisciplinary, by at least a certified and experienced psychiatrist, a certified and experienced mental health psychologist and an experienced psychiatric community worker. DSM-IV-TR diagnoses are formulated using the Diagnostic Manual-Intellectual Disability (DM-ID) criteria.¹² The DM-ID offers adaptations of DSM-IV-TR diagnostic criteria and provide guidelines for making accurate psychiatric diagnoses in patients with various levels of ID. In the RMHC group diagnoses were formulated using the DSM-IV -TR.²

Among the 599 registered at the two specialized centres, diagnostic information was available for 576 patients (95.8%). Of these 576 patients, 511 (85.3%) were diagnosed with either BIF or mild ID. A total of 65 patients (11.3%) were excluded from the present study because level of ID was not known at the time (2.3%) or because they had moderate (8.9%) or severe (0.2%) ID. For the RMHC group diagnostic information was available for 1054 of the 1254 registered patients (84.1%). Among these patients, 14 (1.1%) were diagnosed with BIF. These patients were excluded from the current analyses.

Within our organization, patients with average or above average intellectual functioning with pervasive developmental disorders (PDDs) are referred to a special centre for autism spectrum disorders, while patients with a PDD and ID are referred to one of the two CPID. This would lead to a possible referral bias when comparing the rates of autism because patients with PDDs were underrepresented in the RMHC group compared to the BIF and mild ID groups. Therefore, patients with PDDs were excluded from the current analyses. One hundred-and-twenty-four (24.3%) individuals were excluded from the BIF and mild ID groups and another 14 (1.1%) individuals were excluded from the RMHC group because of a diagnosis of PDD.

A total of 235 individuals were diagnosed with BIF and 152 individuals had a mild ID. Thus, the final groups consisted of 235 participants with BIF (BIF group), 1026 participants from regular mental health care (RMHC group) and 152 participants with mild ID (mild ID group).

Measures

Demographic variables and diagnostic categories

The following variables were collected for each patient from the electronic patient file: age, sex, level of ID and DSM-IV-TR axis I diagnoses. All DSM-IV-TR axis I diagnoses recorded in the official registration system of the electronic patient file were registered. For analyses, the DSM-IV-TR diagnoses were categorized as follows: psy-

chotic disorders (subdivided into schizophrenia and psychotic disorder Not Otherwise Specified (NOS)), mood disorders (subdivided into major depressive disorder (MDD), dysthymic disorder, depressive disorder NOS and bipolar disorder), anxiety disorders (subdivided into posttraumatic stress disorder (PTSD), panic disorder, generalized anxiety disorder, social and specific phobia and obsessive compulsive disorders (OCD)), somatoform disorders (subdivided into somatisation disorder, undifferentiated somatoform disorder, conversion disorder, pain disorder and hypochondria) and V-codes. Individuals with attention deficit hyperactivity disorder (ADHD) and impulse control disorders NOS were categorized together as ADHD and impulse control disorders. Alcohol abuse and alcohol dependence were categorized together as alcohol abuse and dependence. Cannabis abuse and cannabis dependence were categorized together as cannabis abuse and dependence. The remaining diagnoses were not analysed because rates were too low or they were absent. These included cognitive disorders, tic disorders, sexual disorders, other substance abuse disorders, eating disorders and sleep disorders.

Intelligence

In the BIF and mild ID groups, level of ID was based on IQ testing, using the Wechsler Adult Intelligence Scale (WAIS-III).¹³⁻¹⁵ Following DSM-IV-TR criteria, participants were divided into two groups: BIF (Total Intelligence Quotient (TIQ) 70-85) and mild ID (TIQ 50-70). There was no IQ testing in the RMHC group.

Statistical analyses

Demographic and clinical variables were compared among the BIF group and the RMHC and mild ID groups using analysis of variance (ANOVA) with post-hoc Bonferroni correction for continuous variables (for example, age) and Chi-square tests for dichotomous and categorical variables (for example, gender and diagnoses). First, all three groups were compared using a Chi-square test. Second, when overall differences were found, a comparison was conducted comparing the BIF group with both the RMHC and mild ID groups. In additional analyses outcomes were corrected for gender and age using binary logistic regression. All analyses were performed using SPSS Statistics version 16.0 (SPSS Inc, Chicago, IL). for Windows. When chi-square conditions were not met, percentages were given but no statistical analyses were performed. A conservative level of significance was set at $p \leq 0.01$.

Results

Demographic characteristics

As shown in Table 1, The RMHC group consisted of 1026 participants. A total of 235 individuals were diagnosed with BIF and 152 individuals had a mild ID. Even though the percentage of females was highest in the BIF group (66.8%), there was no

significant difference among the three groups ($\chi^2= 5.65$, $df= 2$, $p= 0.06$). There was a significant difference in mean age among the three groups ($p < 0.001$). The mean age was lowest in the BIF group (33.4, $SD= 12.5$) and highest in the RMHC group (44.3, $SD= 16.6$, $p < 0.001$). There was a significant difference in mean age between the BIF and the RMHC group ($p < 0.001$), as shown in table 2. There was no difference in mean age between the BIF and the mild ID group.

Comparison of diagnoses

The mean number of DSM-IV-TR axis I diagnoses did not differ significantly among the three groups. Comparisons of the percentages of diagnostic categories among the three groups are presented in table 1. In table 2, percentages of different disorder-types are presented between the BIF group and the RMHC group on the one hand and the mild ID group on the other hand.

Psychotic disorders

A significant difference was found in the presence of psychotic disorders among the three groups ($\chi^2= 10.7$, $df= 2$, $p= 0.005$), with the lowest rates (6.8%) in the BIF group (table 1). The rate of schizophrenia was highest in the RMHC group (8.3%) and lowest in the BIF group (1.2%) ($\chi^2= 15.5$, $p < 0.001$). The rate of psychotic disorders NOS was highest in the mild ID group (8.6%) and lowest in the RMHC group (2.9%) ($\chi^2= 11.8$, $df= 2$, $p < 0.003$). Table 2 shows that the rate of psychotic disorders was significantly lower in the BIF group compared to both the RMHC (14.7%) and the mild ID (15.1%) groups ($\chi^2= 7.1$, $df= 1$, $p= 0.008$).

Mood disorders

There was a significant difference among the three groups in the overall presence of mood disorders ($\chi^2= 40.6$, $df= 2$, $p < 0.001$) (table 1). This was also true for depressive disorder ($\chi^2= 23.7$, $df= 2$, $p < 0.001$). The highest rates of overall mood disorders (36.2%) and MDD (21.2%) were in the RMHC group. The rate of bipolar disorder was also highest in the RMHC group (6.7%). The overall presence of mood disorders and the rate of depressive disorder did not differ between the BIF (17.4%) and mild ID (20.4%) groups (table 2). Most groups of mood disorders however, were too small to conduct statistical tests.

Anxiety disorders (including PTSD)

The rate of all anxiety disorders taken together differed significantly among the three groups ($\chi^2= 14.3$, $df= 2$, $p= 0.001$) (table 1). This difference was mainly due to the higher rate of PTSD in the BIF (19.6%) and mild ID groups (19.7%) compared to the RMHC (10.4%) group ($\chi^2= 21.1$, $df= 2$, $p < 0.001$). The rates of panic disorder, generalized anxiety disorder, social phobia, specific phobia, OCD and anxiety disorder NOS did not differ much among the groups. Most groups of specific anxiety disorder

ders were too small to conduct statistical tests. There was no significant difference in the overall rate of anxiety disorders, or in the rate of PTSD between the BIF and the mild ID groups (table 2).

Somatoform disorders

There was no significant difference among the three groups in the overall presence of somatoform disorders (table 1). The different categories of somatoform disorders were too small to conduct statistical tests.

Table 1. Demographic characteristics and statistical comparisons of the percentages of DSM-IV-TR axis I diagnoses between the RMHC, BIF and mild ID Groups.

	RMHC (=1026)	BIF (n=235)	Mild ID (n=152)	p-value
Demographic characteristics				
Gender, n females (%)	603 (58.8%)	157 (66.8%)	96 (63.2%)	0.06
Age, mean (SD)	44.3 (16.6)	33.4 (12.5)	37.2 (13.6)	< 0.001
Age, range	15.8 - 95.4	16.3-78.2	16.8-70.6	
DSM-IV-TR axis I diagnoses, mean (SD)	1.46 (0.7)	1.49 (0.7)	1.38 (0.6)	0.30
DSM-IV-TR axis I diagnoses				
<i>Psychotic disorders</i>	151 (14.7%)	16 (6.8%)	23 (15.1%)	0.005
Schizophrenia	85 (8.3%)	3 (1.2%)	8 (5.3%)	< 0.001
Psychotic disorder NOS	30 (2.9%)	10 (4.3%)	13 (8.6%)	0.003
<i>Mood disorders</i>	371 (36.2%)	41 (17.4%)	31 (20.4%)	< 0.001
Depressive disorder	217 (21.2%)	21 (8.9%)	18 (11.8%)	< 0.001
Dysthymic disorder	37 (3.6%)	6 (2.6%)	4 (2.6%)	–
Bipolar disorder	69 (6.7%)	4 (1.6%)	5 (3.3%)	–
Mood disorder NOS	6 (0.6%)	7 (3.0%)	4 (2.6%)	–
<i>Anxiety disorders</i>	237 (23.1%)	81 (34.5%)	45 (29.6%)	0.001
PTSD	107 (10.4%)	46 (19.6%)	30 (19.7%)	< 0.001
Panic disorder	57 (5.6%)	10 (4.3%)	4 (2.6%)	0.26
Generalized anxiety disorder	14 (1.4%)	3 (1.3%)	1 (0.7%)	–
Social phobia	16 (1.6%)	5 (2.1%)	2 (1.3%)	–
Specific phobia	6 (0.6%)	5 (2.1%)	1 (0.7%)	–



Continuation of table 1.

Obsessive compulsive disorder	17 (1.7%)	7 (3.0%)	3 (2.0%)	–
Anxiety disorder NOS	58 (5.7%)	13 (5.5%)	6 (3.9%)	0.69
<i>Somatoform disorder</i>	26 (2.5%)	3 (1.3%)	5 (3.3%)	0.39
Somatisation disorder	2 (0.2%)	0 (0%)	0 (0%)	–
Undifferentiated Somatoform disorder	10 (1.0%)	2 (0.9%)	2 (1.3%)	–
Conversion disorder	4 (0.4%)	0 (0%)	3 (2.0%)	–
Pain disorder	4 (0.4%)	1 (0.4%)	0 (0%)	–
Hypochondria	8 (0.7%)	0 (0%)	0 (0%)	–
<i>ADHD or Impulse control disorder</i>	135 (13.2%)	31 (13.2%)	10 (6.6%)	0.67
<i>Alcohol abuses or dependence</i>	68 (6.6%)	11 (4.7%)	5 (3.3%)	0.18
<i>Cannabis abuse or dependence</i>	22 (2.1%)	12 (5.1%)	2 (1.3%)	0.02
<i>V-codes</i>	97 (9.5%)	53 (22.6%)	20 (13.2%)	< 0.001

All p-values based on Chi-square testing with 2 df, - conditions for chi-square test are not met. SD= Standard Deviation, BIF= Borderline Intellectual Functioning, ID= Intellectual Disability, RMHC= Regular Mental Health Care, NOS= Not Otherwise Specified, PTSD= Posttraumatic Stress Disorder, ADHD= Attention Deficit Hyperactive Disorder

Substance abuse/dependence

There was no difference in the presence of alcohol and or cannabis abuse/dependence among the three groups (table 1).

ADHD/ Impulse-control disorders

There was no significant difference in the percentage of diagnosed ADHD/impulse-control disorders among the three groups (table 1).

V-codes

There was a significant difference in the percentage of diagnosed V-codes among the three groups ($\chi^2 = 31.2$, $df = 2$, $p < 0.001$)(table 1). The percentage of V-codes was over twice as high in the BIF group (22.5%) compared to the RMHC group (9.5%)($\chi^2 = 31.2$, $df = 2$, $p < 0.001$)(table 2).

Table 2. Demographic characteristics and statistical comparisons of the percentages of DSM-IV-TR axis I diagnoses between the BIF group and the RMHC and mild ID group.

	BIF (n=235)	RMHC (n=1026)	p-value *	Mild ID (n=152)	p-value **
Demographic characteristics					
Gender, n females (%)	157 (66.8%)	603 (58.8%)	0.02	96 (63.2%)	0.46
Age, mean (SD)	33.4 (12.5)	44.3 (16.6)	<0.001	37.2 (13.6)	0.06
DSM-IV-TR axis I diagnoses					
<i>Psychotic disorders</i>	16 (6.8%)	151 (14.7%)	0.001	23 (15.1%)	0.008
Schizophrenia	3 (1.2%)	85 (8.3%)	–	8 (5.3%)	–
Psychotic disorder NOS	10 (4.3%)	30 (2.9%)	0.29	13 (8.6%)	0.08
<i>Mood disorders</i>	41 (17.4%)	371 (36.2%)	<0.001	31 (20.4%)	0.47
Depressive disorder	21 (8.9%)	217 (21.2%)	<0.001	18 (11.8%)	0.35
<i>Anxiety disorders</i>	81 (34.5%)	237 (23.1%)	<0.001	45 (29.6%)	0.32
PTSD	46 (19.6%)	107 (10.4%)	<0.001	30 (19.7%)	0.97
<i>V-codes</i>	54 (22.6%)	97 (9.5%)	<0.001	20 (13.2%)	0.02

All p-values based on Chi-square testing with 1 df, p-value of statistical comparisons between the borderline ID and the RMHC groups, ** p-value of statistical comparisons between the borderline ID and the mild ID groups. SD= standard deviation, – Conditions for chi-square test are not met, BIF= Borderline Intellectual Functioning, ID= Intellectual Disability, RMHC= Regular Mental Health Care, NOS= Not Otherwise Specified, PTSD= Posttraumatic Stress Disorder

Discussion

In the Netherlands, patients with BIF are eligible to specialized outpatient mental health care, offering the opportunity to examine psychiatric co-morbidity in a group of people intellectually functioning in between people with and without an ID and often going unnoticed in most countries. In the current study, the rates of DSM-IV-TR axis I psychiatric disorders were compared among patients with BIF (BIF group), outpatients from regular mental health care (RMHC group) and outpatients with mild ID (mild ID group). To our knowledge there are no previous studies specifically focused on the rate of psychiatric disorders of patients with BIF in outpatient mental health care. Most striking differences, compared to the RMHC group, were the high rate of PTSD and V-codes in the BIF group and the low rates of psychotic disorders and MDD. Also compared to the mild ID group, psychotic disorders were significantly less common in the BIF group.

The rate of psychotic disorders was lower in the BIF group than in both the RMHC and the mild ID groups. Considering the association found in earlier studies between lower IQ scores and an increased risk for schizophrenia^{16–18} this is a notable finding. It is unlikely that BIF is associated with less chance of becoming psychotic. Based on our experience we can say that psychotic patients with BIF are frequently referred from our outpatient department to teams specialized in the treatment of psychoses, like early detection and Intervention teams and functional assertive community treatment,¹⁹ more so than psychotic patients with mild ID who do not seem able to profit from the above-mentioned approaches. More research is needed to explore this further.

The low rates of mood disorders in patients with BIF compared to the RMCH group is also notable. It is contrary to what may be expected from literature. Hurley et al.⁵ found high rates of mood disorders. We do not think it to be very probable that a BIF predisposes to less mood disorders than a more severe ID. This is in line with the absence of differences in our sample between BIF and mild disorders in this respect. We do not think that our therapists missed these diagnoses either. However, depressed patients may have been referred less often to our department as a lower mood is less easily recognized and labelled as a possible disorder by significant others.^{20,21}

Compared to the RMHC group PTSD was almost twice as common in the BIF group and rates did not differ between patients with BIF and patients with mild ID. We know that patients with ID are more likely to experience traumatic events.^{22–24} They are also more vulnerable to the disruptive effects of trauma, and thus to PTSD.¹² Thus far PTSD in patients with BIF is underexposed in the literature. Our data warrant more attention to this subject.

Another result that merits discussion was the high rate of V-codes in the BIF group compared to both the RMHC and the mild ID groups. In the DSM-IV-TR, V-codes are used to indicate “other conditions that may be a focus of clinical attention”. V-codes include, for instance, codes for relational problems, occupational problems and phase of life problems. In general, V-codes are used to capture clinically significant distress or problems functioning in daily life.² At the least, the high rates of V-codes in the BIF group suggest that these patients present with complex problems: ID, psychiatric disorders and clinically significant distress or problems functioning in daily life as signified by these V-codes. The alternative explanation might be that this specialized clinic is more likely to record these additional diagnoses. More research is needed to explore this further.

The present study has several strengths. First, this study examines a large sample BIF outpatients which is a population not considered part of the ID population in most countries. They are thought to be especially vulnerable for developing psychiatric disorders and less likely to receive adequate treatment.⁴ Second, in the BIF and mild ID-patients the level of ID was always recently established and based on the standardized WAIS-III, which ensured that the labels of BIF and mild ID were carefully

applied. Third, a broad range of DMS-IV-TR diagnoses was included. Fourth, these diagnoses were the diagnoses as recorded in the official registration system of the electronic patient file, applied after a careful diagnostic process. Fifth, the fact that the findings are based on large samples from a naturalistic outpatient setting makes them generalizable to the clinical field of interest.

The results should also be interpreted in the light of some limitations. First, issues of referral most likely introduced some bias. The BIF group consisted of significantly more females than the RMHC group. In addition, the mean age in the BIF and mild ID groups was lower than in the RMHC group. Using binary logistic regression to correct for gender and age did not alter the outcomes (data not shown). Post hoc analyses showed that the difference in gender was accounted for by the high rate of female PTSD patients with BIF or mild ID. When PTSD patients were excluded, there was no longer a difference in male-to-female ratio (data not shown). The mean age was lowest in the patients with BIF. This could mean that individuals with BIF develop psychiatric symptoms at a younger age. It could also mean that older individuals with BIF are less likely to be referred to specialized services. In both the BIF and mild ID groups there were many patients diagnosed with an autism spectrum disorder because of a special referral policy. They were excluded from analysis, which means that part of the initial sample was not included. However, most patients diagnosed with an autism spectrum disorder did not report other psychiatric disorders and only made up a minor part of the rates of psychiatric disorders in the ID groups, so the extent of the introduced bias probably is small. A second limitation is that results apply only to outpatients and cannot be generalized to more severely ill in-patients. Third, There was no IQ testing in the RMHC group. Fourth, demographic information was limited and information on treatment was not available. And fifth, co morbidity of axis II disorders was not accounted for. Future research could investigate the rates and co morbidity of axis I and II disorders in patients with a BIF.

Conclusion

In conclusion, results indicate that individuals with BIF are most commonly diagnosed with PTSD and V-codes. Compared to patients from regular mental health care they are younger, less likely to be diagnosed with psychotic and mood disorders and more likely with anxiety disorders, more specifically PTSD. Compared to their peers with mild ID referred to the same service, they are less likely to be diagnosed with psychotic disorders. Perhaps, the results remind us that this in many countries invisible group in the middle may not be well addressed by general psychiatry, or by ID psychiatry. Specific attention may be warranted in clinical practice as well as in research lest they fall between two stools.

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