

Aggressiveness in bipolar illness: from stigma to reality

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SUMMARY

Objectives

Many studies over the years have searched for an association between violence and psychiatric diagnoses, though not providing a unanimous and confirmative result. We have sought to extend and deepen the evidence on this topic, focusing on a specific diagnosis and its particular phases of illness and looking for correlation between psychiatric co-diagnoses and outpatients' visits adherence. Considering the clinical importance of violent acts and the social stigma related to them, we analysed different aspects of aggressivity: those undoubtedly violent acts and aspects like irritability or agitation that are frequently alarming and contribute to maintaining the social stigma towards psychiatric patients.

Methods

Over a 12-month period we recruited 151 consecutively admitted bipolar type I inpatients. We studied their presenting complaint, past medical and family history; we collected information about lifetime hetero- or self-aggressive behaviours, irritability, agitation, suicide attempts, alcohol, or substance abuse. Every patient was evaluated for personality disorders through SCID-5 for Personality Disorders (SCID-5-PD).

Results

The overall aggressivity in our sample resulted in 11.92% of cases, while the number of aggressive episodes during euthymia decreased to 2.64%, a level that is nearly close to that of the population without a lifetime psychiatric disorder. Personality disorders and alcohol abuse appeared to be the main risk factors for irritability (Fig. 1); substance abuse, above all cannabis and cocaine, for both irritability and hetero-aggressive behaviour (Fig. 2). We observed how subjects who displayed more compliance to psychiatric and psychological visits exhibited a significant lower aggressive behaviour than less adherent subjects. Our data disconfirms the common conception that links psychotic features to violence and shows how the great majority of patients displaying symptoms like irritability or agitation (often alarming as aggressiveness) do not display any violent action.

Conclusions

Studying aggressive behaviours in a population with a diagnosis of bipolar disorder we observed how the rare episodes of aggressiveness were mainly condensed in the active phases of the illness and mainly related to alcohol or substance abuse, while violent acts during long periods of wellbeing appear in line with those of the general population. We are confident our data might be helpful in deconstructing stigma that a psychiatric diagnosis equals violence, and that violence could somehow be justified by a disease.

Key words: bipolar disorder, aggressive behaviour, aggressivity, violence, stigma, mental illness, substance abuse, personality disorder

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Conflict of interest

The Authors declare no conflict of interest

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Introduction

One of the most compelling hardships for health professionals is to help patients face a social milieu that still today strongly stigmatizes people

with mental health disorders. The trending topic of prejudice and discrimination is violence, as mainly perpetrated by mental illness subjects.

A US nationwide survey showed that as many as 75% of the public considered people with mental illness as violent¹. This evidence appeared to increase over the years: in 2000 a report found that the number of Americans who viewed people with mental illness as violent and socially dangerous doubled with respect to the number of people who reported the same opinion back in 1950². How come so many people link mental illness to violent behavior?

There is no univocal answer. Amid all the factors contributing to stigma there is the media and how they report episodes of violent crimes. Not only in the news, but also in the entertainment industry, connecting mental disorders to violent behaviors and, vice versa, justifying violent behaviors because of a mental disorder. The general population finds it reassuring and easier to accept that violent crimes are committed by “different” or “sick” people. The institutional care system and lastly the scientific community are also in part responsible: so far they have failed to provide the population with a unanimous and confirmative result about this topic. Not only are scientific studies often discordant and poorly detailed, but also seldom updated³⁻⁶.

As a matter of fact, most psychiatric patients are not dangerous and only a minority of individuals affected by psychiatric conditions presents lifetime aggressive behavior. Conversely, they are likely to be victims of other people's violent acts⁷⁻⁹. From literature data it appears that the main psychiatric populations accountable for aggressive behaviors are schizophrenic and bipolar disorder subjects¹⁰. Going deeper in this topic, it seems that disease-specific aspects contribute to higher prevalence of violent behaviors among psychiatric patients than among the general population. One may question that the relative weight of comorbidity is actually relevant, where main co-occurring (and presumably precipitating) disorders are alcohol or other substance abuse, and personality disorders; other minorly impacting factors are learning disability and presenting with acute mania rather than mixed episodes, depressive episodes or other non-affective psychosis. For example, bipolar I and II disorder patients are reported to have committed aggressive behavior in 25.34 and 13.58% of cases, *versus* 0.66% in the general adult population. A previous report of aggressiveness in “pure” bipolar patients, with either a bipolar I or II diagnosis, was of 2.52 and 5.12%, respectively¹¹. On the other hand, those patients with a diagnosis of alcohol abuse or substance abuse disorder behaved aggressively in 7.22 and 11.32% of cases, respectively¹¹. In the same year Fazel et al. observed aggressive behavior (or its proxy, “trouble with the police or the law”) in 12.2% of individuals with the diagnosis of bipolar disorder, 8.2% with alcohol abuse, 10.9% with drug

abuse and 1.9% with no disorder¹². Probably, due to the selection of patients and to the sample size, the data is not comparable. Considering the lack of univocal evidence further studies are desirable.

Aims

Bipolar disorder seems quite convenient to our goal, since it is one of the most likely to lead to violent behavior, most frequently related to psychiatric comorbidities (e.g., substance and alcohol abuse, personality disorders), and it is characterized by acute illness episodes and an inter-critic period of wellbeing.

We have set three goals in this article:

- considering the lack of univocal, recent and disease-specific data available in literature, we seek to extend and deepen evidence on this topic, focusing our attention on whether aggressive episodes occur during acute illness phases or also in euthymic periods;
- we focused on the relationship between violence and the presence of co-diagnoses as personality disorders, alcohol or substance abuse, and continuity to outpatients' visits;
- considering the clinical importance of violent acts committed by psychiatric patients and the social stigma related to them, we tried to innovatively analyze different shades of aggressivity: those undoubtedly violent acts like self- or hetero-aggressive behaviour and aspects, like irritability or agitation, that are not overt violence, but contribute to maintain the social stigma towards psychiatric patients.

Definitions

Aggression is an overt behavior intended to cause harm, pain or damage of various degrees. It can be subdivided in verbal aggression, aggression against objects, against self, and against others¹⁴. It is heterogeneous in its determinants and no standardized biological markers are available.

Violence describes aggression towards other people. Very often violence and aggression are interchanged, but violence preferentially refers to criminous context.

Agitation is characterized by excessive and disorganized motor or verbal activity.

Irritability is an unpleasant mood state independent of depression or anxiety; decades ago, descriptive psychopathology pointed out how this term had been introduced in clinical reports paired with aggressivity, or hostility without a specific definition¹⁵.

Materials and methods

Participants

The present study was designed as a retrospective,

naturalistic study conducted over a 12-month period at the Mood Disorders Unit of San Raffaele Hospital in Milan. At the time it served an urban catchment area with a total population of 1,378,689 people.

The inclusion criteria for this project were > 17 years of age, fulfilling the Diagnostic and Statistical Manual of Mental Disorders, 5th edition (DSM-5) criteria for Bipolar Disorder type I (manic, mixed or depressive episode), completion of the assessment for personality disorders, using SCID-5 for Personality Disorders (SCID-5-PD). We excluded patients with a diagnosis of schizophrenia, other psychotic disorders or intellectual disability.

From 1st January to 31st December 2019, 151 consecutively admitted bipolar type I inpatients were recruited. During hospitalization the presenting complaint, past medical and family history were collected in detail by a psychiatrist through daily clinical interviews. Based on common clinical practice and available literature data that have reported impulsivity and aggressivity to be significantly higher in bipolar disorder patients with comorbid personality disorders¹³, we usually perform SCID-5-PD to every bipolar inpatient. To ensure absence of any active depressive and manic symptoms at the time of the assessment of personality, the Montgomery-Asberg Depression Rating Scale (MADRS) and the Young Mania Rating Scale (YMRS) were used.

All patients were treated with adequate pharmacological, somatic and chronobiological approaches, according to clinical judgments. At discharge every patient had an appropriate mood stabilizer treatment and underwent regular follow-up visits.

We collected socio-demographic clinical characteristics and cumulative rates of lifetime acute mood episodes (depressive, mixed and manic). As binary variables, we assessed the presence or absence in lifetime of self-aggressive behaviours, suicide attempts and Alcohol Use Disorder. We created multiple categorical variables collecting lifetime data of hetero-aggressive behaviour (verbal aggression, aggression against objects and against others), irritability/impulsivity, agitation, Substance Use Disorders (cannabis, cocaine, others) and Personality Disorders.

The study, approved by the Ethical Committee of the Hospital, was conducted in accordance with the Declaration of Helsinki. A written informed consent was obtained from all participants.

SCID-5-PD

SCID-5-PD is a semi-structured clinical interview, performed by trained psychologists and used in research and clinical settings in order to evaluate the presence of one out of the 10 personality disorders described in DSM-5. As a novelty from the previous edition, SCID-5-PD allows us to make a categorical or a dimensional diagnosis of personality disorders¹⁶.

Statistical analyses

To investigate overall group differences in clinical and socio-demographic variables, we performed a Student's t-test and chi-square for continuous and categorical variables, respectively.

To investigate the possible relationship between self- or hetero-aggressive behaviour, irritability, agitation, personality disorders and substance or alcohol abuse, we created contingency tables and performed Pearson's chi-squared or Fisher-Freeman-Halton test, where appropriate.

Results

Clinical and socio-demographic data are displayed in Table I.

The overall aggressivity in our sample resulted in 11.92% (18/151). Stratifying it for the subtype of aggressive behavior we obtained: 9.27% (14/151) for verbal aggressivity, 1.32% (2/151) for aggressivity against objects, 1.32% (2/151) for aggressivity against others.

The number of aggressive episodes during euthymia resulted in 2.64% (4/151). Then, stratifying it for the subtype of aggressive behavior, we examined if some correlations existed with known risk factors.

We obtained significant correlation by the Fisher-Freeman-Halton test, for alcohol and substance abuse, but not for personality disorders (PD) [Irritability: no alcohol 4.22% (6/142) vs alcohol 22.22% (2/9); verbal aggressivity: no alcohol 1.41% (2/142) vs alcohol 11.11% (1/9); aggressivity against objects: no alcohol 0.70% (1/142) vs alcohol 0% (0/9) (Fig. 1); X^2 9.918 p = 0.019. Irritability no substance 2.15% (3/139) vs substance 41.67% (5/12); verbal aggressivity no substance 0.72% (1/139) vs substance 16.67% (2/12); aggressivity against objects no substance 0% (0/139) vs substance 8.33% (1/12) (Fig. 2); X^2 63.151 p < 0.001. Irritability: no PD 3.50% (8/114) vs PD 10.81% (4/37); verbal aggressivity: no PD 1.75% (2/114) vs PD

TABLE I. Clinical and demographic characteristics of the sample.

CHARACTERISTICS	
Gender (F/M)	97/54
Age, years mean \pm sd	56.36 \pm 13.42
Lifetime episodes, mean \pm sd	12.08 \pm 9.916
Current episode duration, days mean \pm sd	24.47 \pm 10.42
Current depressive/manic/mixed episode	150/29/15
Psychotic features (Y/N)	11/140
Personality Disorder co-diagnosis (Y/N)	37/114
Alcohol Use Disorder co-diagnosis (Y/N)	9/142
Substance Use Disorder co-diagnosis (Y/N)	12/139

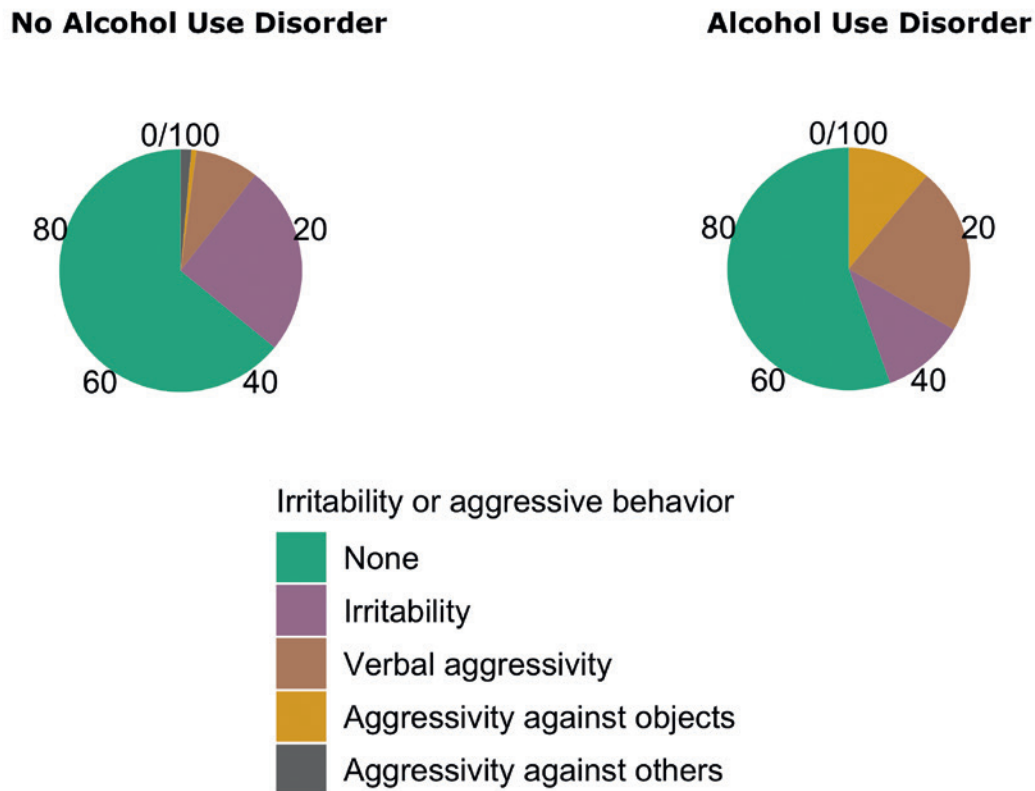


FIGURE 1. Percentage of irritability and aggressive episodes in the bipolar I sample. Left graph: non-alcohol use disorder patients, right graph: alcohol use disorder comorbid patients.

2.70% (1/37); aggressivity against objects: no PD 0% (0/114) vs PD 2.70% (1/37); X^2 6.838 $p = 0.094$].

Calculating the number of patients who displayed aggressivity during active phases of illness and stratifying it for the subtype of aggressive behavior, we obtained significant correlation by the Fisher-Freeman-Halton test for alcohol and substance abuse, but no significativeness was obtained by chi-square test for personality disorders (PD). [Verbal aggressivity: no substance 7.91% (11/139) vs cannabis 25% (2/8) vs cocaine 33.33% (1/3); aggressivity against objects: no substance 0% (0/139) vs cannabis 8% (0/8) vs cocaine 66.66% (2/3); aggressivity against others: no substance 1.44% (2/139) vs cannabis 0% (0/8) vs cocaine 0% (0/3); X^2 105.318 $p < 0.001$ (Figure 2). Verbal aggressivity: no alcohol 8.45% (12/142) vs alcohol 22.22% (2/9); aggressivity against objects: no alcohol 0.70% (1/142) vs alcohol 11.11% (1/9); aggressivity against others: alcohol 1.41% (2/142) vs alcohol 0% (0/9) X^2 9.277 $p = 0.026$ (Figure 1). Aggressivity: no PD 10.52% (12/114) vs PD 16.21% (6/37); X^2 0.861 $p = 0.353$].

Searching for correlations between patients who displayed irritability and psychiatric co-diagnosis we ob-

tained no significant results by chi-square test for personality disorders X^2 0.948 $p = 0.330$ and alcohol abuse X^2 0.266 $p = 0.606$; no significant results by Fisher-Freeman-Halton test for substance abuse: no substance 34.53% (48/139) vs cannabis 50% (4/8) vs cocaine 100% (3/3); X^2 6.66 $p = 0.084$.

We examined gender distribution of aggressiveness in our sample and found no statistical significance neither in the acute phase of illness (female 12.37% vs male 11.32%, X^2 0.036 $p = 0.850$) nor in inter-critic periods (female 1.03% vs male 5.66%, X^2 2.830 $p = 0.093$). Then, we calculated the relative percentage change of aggressivity from acute episode to inter-critic period: in the whole sample it was 77.78%, stratified by gender it was in females 91.67% and in males 50%.

The mean age in those who exhibited aggressive behavior was significantly younger than those who were not aggressive (47.39 ± 12.90 years old vs 57.68 ± 13.06 years old, $p = 0.002$).

There was no significant correlation between aggressive behaviour and mean duration of hospitalization (24.52 ± 10.62 days vs 23.94 ± 9.04 days, $p = 0.821$).

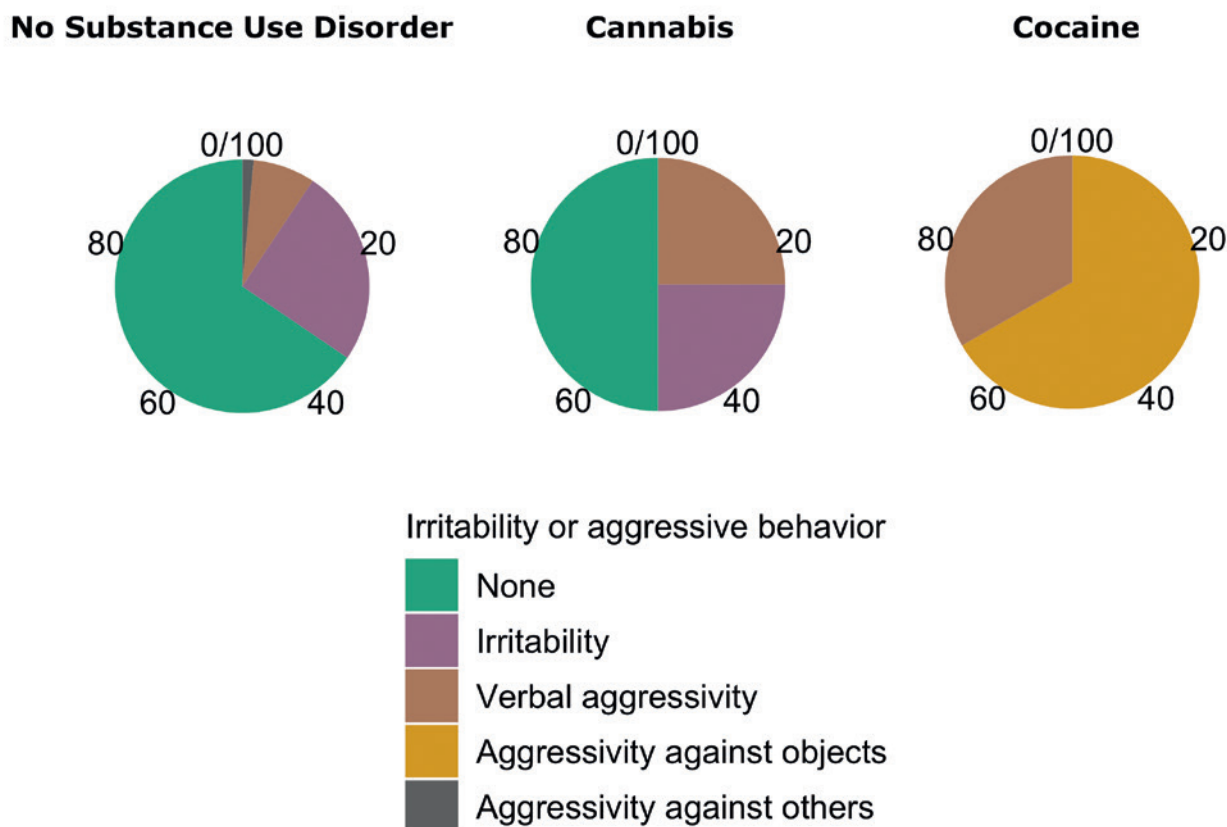


FIGURE 2. Percentage of irritability and aggressive episodes in the bipolar I sample. Left graph: non-substance use disorder patients; middle graph: cannabis abuse; right graph: cocaine abuse.

We found a statistically significant correlation by the Fisher-Freeman-Halton test between aggressive behaviour and outpatients visits adherence (VA): [Verbal aggressivity: no VA 13.33% (4/30) vs VA 8.40% (10/119); aggressivity against objects: no VA 0% (0/30) vs VA 1.68% (2/119); against others: no VA 6.67% (2/30) vs VA 0% (0/119), X^2 9.325 p = 0.025].

Studying patients who presented psychotic features at time of admission, it resulted that none of them had a lifetime history of violent behaviour.

Calculating the number of patients who displayed irritability (55/151), we found by chi-square test a statistically significant difference between those who showed also aggressivity or not (32.73 vs 67.27%, X^2 35.67 p < 0.001]. Finally, calculating the number of subjects who had psychomotor agitation episodes (31/151), we found by chi-square test a statistically significant difference between those who also showed aggressivity or not (35.48 vs 64.52%, X^2 20.628 p < 0.001).

Discussion

We opened this article with a question: are people with

a diagnosis of bipolar disorder more dangerous to society than the rest of the population?

We analyzed data from a 12-month period of bipolar type I inpatients to explore the relationship between violence and the presence of a psychiatric diagnosis. In order to do that, we considered different characteristics of bipolar disorder and the most frequent comorbidities to identify *believable* risk factors of violence. Moreover, we decoded the general term of aggressiveness trying to deepen which behaviors are more tightly bound to social stigma. Considering the overall aggressivity in our sample, our rate of 11.92% is lower than what has been described by the latest studies on the topic by Grant and by Corrigan, who wrote about 25.34% and 12.12%, respectively ^{11,12}. Stratifying it for the type of aggressive behavior, a new in the field and therefore missing corresponding references in other clinical populations, we obtained that our patients were verbally aggressive in 9.27% of cases, aggressive against objects in 1.32% of cases and finally 1.32% of them acted against others.

Conscious of the particular and natural clinical course of bipolar disorder, characterized by recurrent and com-

plete recovery, the first goal of our retrospective study was to examine if aggressive behaviours were timely concentrated or a kind of constant phenomenon throughout a patient's life. In order to do that we divided the occurrence of aggressive behaviour between acute phases versus inter-critic periods: we observed a drastic reduction of aggressive behavior during euthymia from 11.92 to 2.64%, respectively. Our data reaches levels nearly close to those of the general population: about 1-2%^{11-12,22}. It must be highlighted that our percentage comprehensively refers to all types of aggressiveness (where our sample showed only verbal aggressions or against objects, without violent episodes against people). The available literature data always considers violence towards people, but only rarely does it consider other types of violence.

It was noteworthy to observe that aggressive behavior during euthymia was almost always correlated to the presence of a co-diagnosis. Some of the well-known risk factors from literature are personality disorders, alcohol and substance abuse²⁷; in our sample PD and alcohol appeared to be the main risk factors for irritability ($p = 0.094$ and $p = 0.019$, respectively) and substance abuse for both irritability and hetero-aggressive behaviour ($p < 0.001$). This finding is concordant with previous reports¹⁷⁻²⁰. Another recognized risk factor for aggressivity is male gender²¹: however, in our research, it was moderately associated with aggressiveness during euthymia (female 1.03 vs male 5.66%, $p = 0.093$) rather than intra-episode, as we obtained no gender differences in acute episode violence actions (female 12.37 vs male 11.32%, $p = 0.850$). We then calculated the differential rates in aggressive behavior from acute episodes to intercritical periods, finding a decrease for both genders alone (females 91.67, 50%) and for the whole sample (77.78%). This finding concurs with previous population-based investigations reporting an increased relative risk of committing violent crimes for bipolar women compared to female controls^{25,26}.

Regarding age, our sample showed a mean age of 56.36 ± 13.42 years at admission: patients who did not show any aggressiveness were 57.58 ± 13.07 years old, while those who carried out some kind of aggressiveness were significantly younger (47.39 ± 12.09 years old, $p = 0.002$), in accordance with previous literature data^{10,23-24}. Focusing on aggressivity during active phases of the illness to examine and manage any possible risk or predictive factor, we stratified our sample for personality disorders, alcohol or substances abuse. The results suggest that patients with a co-diagnosis of alcohol abuse show a significant increase in aggressivity compared to non-alcoholic patients ($p = 0.026$) (Fig. 1). Notably, all reported episodes concerned verbal aggressivity, doubling those who have no alcohol abuse. Regarding substance abuse, above all canna-

bis and cocaine, we observed an increased irritability from 34.53% in non-abusers up to 50% in the cannabis abuser sample and 100% in cocaine abuser sample ($p = 0.084$) (Fig. 2). With regards to hetero-aggressive behavior, we found increased verbal aggressivity 7.9% in non-abusers to 25% in cannabis abusers and 33.33% in cocaine abusers, with a strong statistical significance ($p < 0.001$); aggressivity against objects from 0% in non-abusers and cannabis abusers, reaching 66.66% of cocaine abusers (Fig. 2), in accordance with previous literature which highlights substance abuse as a major risk factor for impulsivity, aggressivity and violent crimes^{17-19,27}. Despite the fact that subjects with a co-diagnosis of personality disorders seem to act violently more frequently in raw data, our analysis shows no statistical significance, neither for hetero- nor self-aggressivity in the subsample. We may argue that the relatively small sample size and relative count of personality disorder bipolar patients are accountable for this outcome. A finding of our study that has a practical consequence regarding the clinical management of our bipolar patients is that subjects who display more compliance and regularity to psychiatric and psychological visits exhibited a significant lower aggressive behavior (verbally, against objects or people) than less adherent subjects ($X^2 9.325$ $p = 0.025$). It is still to be explored if continuative adherence to visits could constitute a protective factor from acts of violence or vice versa, those who have more aggressive behaviour have higher drop-out rates.

Last but not least, we addressed the stigma associated with violence in psychiatric patients. The ordinary image about psychiatric patients and violence stigma relies on psychotic features, as they are perceived as equivalent to worse aggressivity. We explored this issue in our sample: our data disconfirms the common conception. We observed no aggressive events in our psychotic-feature presenting patients. We suppose that psychotic-feature presenting patients are more likely to be "pure bipolar" and present less alcohol and substance abuse and less personality disorders lowering their intrinsic risk of displaying aggressive behavior. We presume that lack of statistical significance is due to relatively low counts of psychotic-feature presenting patients in our sample.

Stigma becomes evident in everyday life when people are used to consider as crimes, not only real violent acts, but also many other symptoms of psychiatric illness like psychomotor agitation, restlessness and irritability, as intrinsically equivalent to overt aggressivity. To investigate these typical symptoms that are so often alarming as aggressive behaviour, we innovatively considered the common idea of violence as a spectrum, subdividing it into different shades: those undoubtedly violent acts like self- or hetero-aggressive behaviour and aspects, like irritability or agitation, that are not overt violence, but con-

tribute to maintain the social stigma towards psychiatric patients. In our analysis, it is true that the greatest part of aggressive patients was also agitated and irritable, but over 60% of agitated patients (X^2 20.628 $p < 0.001$) and nearly 70% of irritable ones (X^2 35.670 $p < 0.001$) did not display any violent action. Not only are they not aggressive toward objects or people, but we also did not find any evidence of verbal aggressivity.

Conclusions

Studying aggressive behaviours in a population with a diagnosis of bipolar disorder, we observed that the rare

episodes of aggressiveness were mainly condensed in the active phases of the illness and mainly related to alcohol or substance abuse; the percentages of violent acts during long periods of wellbeing appear in line with those of the general population.

Notable was the finding that typical symptoms of manic phases, frequently alarming as violent acts, just in a great minority of cases evolve in overt violence: on the bright side, the majority of our patients, who might be agitated or irritable, were never aggressive.

We are confident our data might be helpful in deconstructing stigma that psychiatric diagnosis equals violence, and that violence could somehow be justified by a disease.

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