Risks Factors of Violence Among Psychiatric Inpatients: Focusing on Substance Abuse and Environmental Violence

Abstract
Violence is a common issue in psychiatry and has multiple determiners. Considering psychiatric inpatients, the main factors which appear linked to violence are male gender, diagnosis of schizophrenia, the symptom severity, the history of violence and substance abuse. The comparative importance of these risk factors of violence is to be determined with accuracy in order to better understand the phenomena of violence and to prevent it. Nevertheless, recent meta-analyses showed that the effect sizes of the strongest clinical indicators of aggression are statistically small and didn’t explain all the aggressive behaviors. In a previous study, we showed that the violence in the psychotic patient’s neighbourhood could represent an important risk factor of inpatient violence and should thus be taken into account.

Keywords: Psychotic disorders; Substance abuse; Violence; In-patient; Neighbourhood

Introduction
In psychiatry, inpatient violence is a common and complex reality. It has negative consequences, both on the cures and on the patients and caregiver’s safety climates [1]. Regarding the risk of inpatient violence, the studies agree on the importance of clinical factors such as the symptoms intensity which proved to be more relevant than socio-demographic factors such as age, gender or socioeconomic backgrounds [16]. The factors which seem more significantly linked to inpatient violence are the diagnosis of schizophrenia and affective disorder, the low degree of insight, the intensity of the thought disturbances, the delusions or the hallucinations. The previous histories of violence (either committed or subjected to) also appear to be a significant variable associated with violence [1-6,10,16]. Concerning the substance abuse, it is a well-established factor of violence in the severely mentally ill patients [7,18]. However, the nature of the link is complex: it may be mediated by psychiatric symptoms or social factors [18] or associated with male gender [10].

This short commentary aims at reviewing the risk factors of violence among psychiatric patients during their hospitalizations. The link between the different factors is examined in this commentary which focuses on the substance abuse and on an understudied factor: the violence in the patient’s neighborhood.

I. Violence of patients in psychiatric wards: A major problem
According to Lozzino et al. almost 1 in 5 patients admitted to acute psychiatric wards in high-income countries commit an act of physical violence during their hospitalizations [10]. There is a high heterogeneity between the wards. The highest rates of violence are found in wards with a majority of males, involuntary patients, patients with schizophrenia and patients with alcohol use disorders. In these cases, and when the authors consider all sorts of aggressively, 60 to 75% of the patients could have an aggressive behavior during their cures [17,21].

II. Risk factors of violence among psychiatric inpatients
Male gender
This risk factor could be less important when we consider...
inpatient violence in comparison with the violence in the community [3,6]. This factor could be linked to the patient violence through the severity of the psychotic symptoms or the presence of abuse of substances [10,18]. Nevertheless, male gender is associated with more numerous and severe physical attacks [8,10].

Diagnosis

At least twenty studies have reported a positive association between schizophrenia and violence [7]. The other diagnoses significantly linked to inpatient violence are bipolar disorder [2,13] mental disorder with organic cause [11] and personality disorder (antisocial, borderline) [15]. An early age of disease onset is also a risk factor [13].

Psychopathology

More than the diagnosis, authors suggest that certain aspects of the positive psychotic symptomatology such as thought disturbances, delusions and hallucinations and poor control of impulses are moderate factors of risks of violence [12,16,20].

A poor insight and no adherence with treatment are to be moderately associated with inpatient violence; with respectively an odd-ratio of 2.8 and 1.7 in the meta-analysis of Witt et al. [20].

Involuntary admission

Several authors find an association between involuntary admission and inpatient violence [6]. It could be explained by the fact that in many countries, auto and hetero-aggressively are required for involuntary admission.

Length of hospitalization

Concerning this factor, the association with violence is inconsistent [10,15]. It is a risk factor at an individual level (violence is a reason for a longer admission) but not at an aggregate level (there is more violence in days immediately after admission in acute admission wards [12].

History of violence

It is the strength predictor of violence among the psychiatric inpatients [20] and the so when associated with male gender [10]. We both considered the violence suffered [5] or committed by the patients [20].

Substance abuse

There is a well-established association between substance use and violence in the severely mentally ill patients, although the nature of the relationship is complex [7,10]. Substance use increases the risk of violence but this may be mediated by increasing the psychotic symptoms, the impulsiveness or by the link with male gender or with low socioeconomic level.

In psychiatric wards, substance abuse could be a contributing factor of violence in only 2% of the cases [2,10]. But the evaluation of substance abuse is a problem in the studies. Few proceeded to a systematic screening by urine test or blood sample [19]. This diagnosis could be underestimated. Furthermore, there could be a difference between alcohol abuse and drug abuse. A history of alcohol is associated with a major risk of violence [20,10] whereas drug abuse is linked to a moderate risk or to no risk [4].

III. Data of meta-analyses

The data of the recent meta-analyses analyses bring further clarification concerning the comparative importance of the risk factors of inpatient violence.

History of violence is the strongest predictor of risk [10,20]. Substance abuse, male gender, positive psychotic symptoms and psychopathology domains as poor insight remain risk factors of violence but their effects are moderate [6]. In particular, the substance misuse is moderately associated with inpatient violence [2,20].

When we consider severe violence, these associations do not change [20].

In their meta-analysis, Lozzino et al. mention that modifiable factors in the wards themselves may play an important part in determining rates of inpatient violence [10]. These factors are various: ward size and spaciousness, levels of surveillance of the staff, professional experiences of the nurses, preventive strategies used. It raises the question of the effect of the environment in the psychiatric patient’s aggressive behaviours.

IV. An under-analyzed factor: The violence in the patients’ neighborhood

In a previous study [14], we have assessed the psychotic inpatient’s violence in association with the violence of the neighborhood from which the patients were drawn. The aim of this prospective multicentre study was to estimate the impact of this environmental factor as regards the other factors of risk of violence in the psychotic’s aggressive behaviours.

From June 2010 to May 2011, 95 psychotic inpatients have been included. All the patients were involuntary hospitalized. There was a majority of men (74.7%), with a diagnosis of schizophrenia (42.1%) and a history of violence (30.9%). Thirty-five percent of the patients have abused of alcohol or other substances in the 12 months before the hospitalization. In a bivariate analysis, we found the factors known to be associated with inpatient violence (male gender, the patients’ violence history, substance abuse, manic or mixed disorder, the symptoms severity measured by the Brief Psychiatric Rating Scale, the insight degree) and the city crime rate. In a multivariate analysis, the only significant factors associated with the patient’s violence were substance abuse (p<0.02), the symptoms severity (p<0.02) and the crime rates from the different patients’ cities (p<0.0009).

The known factors associated with inpatient violence as male gender and past history of violence were not found to be associated with the violence in our multivariate analysis. This statement is in accordance with the fact that these factors are risk factors for higher severity of psychosis, substance abuse or violence in the neighborhood. Concerning the substance misuse, we didn’t find a relationship between alcohol abuse and inpatient violence as Lozzino et al. [10] or Bowers et al. [4]. It is certainly due to a lack of power of this study. Similarly, we were
not able to distinguish the various histories of violence, between the judicial condemnations and the involuntary hospitalizations. Furthermore, this study could have taken childhood trauma into account [5].

The fact that the violence of the patients suffering from psychosis might be linked to the degree of violence of the patient’s neighborhood had already been suggested [9]. However, the meta-analysis used in order to show this link can neither examine co-variation between risk factors nor the extent to which a combination of factors increases the risk of violence. The multivariate analysis allows us to suggest that the violence committed by psychotic patients is partly due to some aspects of the illness (substance abuse disorder and the severity of the psychopathology) but it is also due to the violence in the areas from which the patients are drawn.

### Conclusion

Understanding the factors associated with inpatient violence are an important part of devising strategies to protect patients and staff from violent acts. When we consider the violence in the patient’s environments, it is a strength predictor of aggressive behavior such as substance abuse or intensity of the symptomatology. These data could be taken into account so as to organize the cures inside the wards. Besides, it could be relevant to separate the patients in acute phases from the other patients and particularly when admitted, by generalizing the units of psychiatric intensive care.

### Acknowledgement

We acknowledge Ms Charlotte Le Goadec for her readings.

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