

Substance Abuse Comorbidity In Patients Suffering From Of Schizophrenia: About A Survey

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Abstract:

Background: Addiction-related comorbidities affect half of all patients suffering from schizophrenia. They impact on the prognosis and course of the disease, and are a source of difficulties in management. They are the most severe cause of disability in this fragile, often young, category of the world's population, with a socio-economic impact that represents a growing challenge for all healthcare systems. Most research findings agree that the use of psychoactive substances is more frequent among patients in precarious situations, and constitutes a suicide risk factor. Many factors have been identified to explain the particular links between schizophrenia and addiction. The aim of our study was to investigate the frequency of addictive comorbidity in schizophrenic patients and to identify the risk factors for this association.

Materials and methods: This was a prospective, descriptive study carried out at the University Psychiatric Hospital in Algiers, involving 300 inpatients of both sexes with age extremes ranging from 17.0 to 65.0 years, diagnosed as having schizophrenia according to DSM-IV TR criteria, with validation of cases using the PANSS assessment scale. Data were collected by means of a hetero-questionnaire including sociodemographic, clinical and therapeutic data, as well as data on psychoactive substance abuse and smoking behaviour.

Results: The mean age of our population was 38 ± 7 years, with a male predominance. The majority were single (69%). Most lived in urban areas, and more than half had not attended secondary school. Two-thirds of patients had no occupation. 92% lived with their families. More than half had a poor social situation. Onset was either acute or progressive, with a mean age of 24.1 ± 0.6 years. The majority had a paranoid subtype and a disorganized subtype. In more than half the cases (61%), the onset was due to stressful life events and toxic intake. The average duration of illness was over eight years ($8.9 \text{ years} \pm 1$), with an average of 2.6 ± 0.3 psychiatric admissions per year. The mean duration of untreated psychosis was 4 ± 32 years, and there was no significant relationship with addictive comorbidity and schizophrenia ($p=0.132$). Concerning psychoactive substance abuse, 62.75% had a substance abuse problem, with smoking predominating (51%), followed by cannabis (16.7%) and alcohol (8.7%). The rest of the consumption was cannabis + tobacco, then alcohol + psychotropic drugs and finally tobacco + cannabis + alcohol. The female sex was not affected by toxic intake, apart from smoking tobacco in 1.01% of women. The average age of onset of substance use in our population was 19 ± 3.8 years. 58.1% began use before the onset of disorders, compared with 41.9% after the onset of disorders. Progressive onset and the paranoid form of schizophrenia were the most frequent among psychoactive substance users. The average duration of addiction was 182 months for smoking and 65 months for cannabis, 32 months for alcohol, 71 months for associations and 16 months for psychotropic drugs. 12% of drug users were non-adherent to antipsychotic treatments. 14% had a history of suicide attempts, with an average of 2.3 ± 0.6 suicide attempts, and almost half had associated depressive disorders. Among comorbid patients, 29.6% were severely dependent, with a preference for smoked drugs.

Conclusions: Addictive comorbidities affect more than half of all patients with schizophrenia. They delay diagnosis and accelerate the course of the disease, with more abrupt and earlier decompensation, more relapses, less compliance with treatment and a poorer prognosis. Care provision and therapeutic recourse remain limited and rarely evaluated.

Key Word: Schizophrenia, Comorbidity, Addictions

Date of Submission: 24-04-2024

Date of Acceptance: 04-05-2024

I. Introduction

Patients with schizophrenia have 4.6 times more addiction problems than people without psychiatric illness^[1]. These figures obviously do not take into account tobacco dependence, which affects over 70% of schizophrenia patients worldwide. The proportion of patients affected by dual diagnosis increases with the severity of the schizophrenia^[1]. The extent of this phenomenon was highlighted in the 1990s by the epidemiological study

carried out by the American Epidemiologic Catchment Area ^[1], which revealed that almost half of all schizophrenics have a substance abuse or dependency problem. The high prevalence of substance abuse among schizophrenics inevitably raises questions about causal links. Indeed, over the last ten years or so, there has been growing interest in the problem of co-morbidity between schizophrenia and substance abuse. This interest stems from the various problems posed by this comorbidity, such as diagnostic problems. Negative consequences include poor compliance with treatment, with a higher rate of relapse and aggressive behaviour, as well as an exacerbation of psychotic and depressive symptoms, and an increase in care consumption and hospital admissions ^[2]. Stéphane Potvin et al, in 2014^[3], point out in their publication that, in the field of comorbidity, a majority of authors and clinicians maintain that cannabis use is a factor associated with the development of psychosis, and that drug addiction is highly prevalent in schizophrenia and adversely affects the prognosis of the latter. Also, the treatments incorporated are superior to the usual care (treatment as usual) offered to this category of the population ^[4-7].

The aim of our study was to investigate the frequency of substance abuse comorbidity in schizophrenic patients and to identify risk factors for this association.

II. Material And Methods

This is a prospective, descriptive study conducted at the University Psychiatric Hospital of Algiers, involving 300 inpatients of both sexes with age extremes ranging from 17 to 65 years. Patients were recruited over a 12-month period from January 2019 to December 2019. We decided to validate the diagnosis of schizophrenia, according to the criteria of the Diagnostic and Statistical Manual of Mental Disorders 4th revised version (DSM4 TR)^[8], and this, to identify the clinical form in connection with addictive behaviors. Exclusion criteria were absence of consent, severely disorganized or unstable patients or other psychiatric diagnoses.

Validation of clinical severity using the PANSS assessment scale (Kay et al., 1987)^[9]. This consists of 30 items, each with a specific definition and detailed criteria corresponding to 7 psychopathological levels of increasing severity. The 30 items are divided into three sub-scales: - Positive, negative and psychopathological. Verbal and written consent was required to include patients in the study. Data were collected by means of a hetero-questionnaire including sociodemographic, clinical and therapeutic data, as well as data concerning the abuse of psychoactive products and smoking habits.

Ethical considerations were respected, namely the anonymity and confidentiality of information recorded on patient files.

Statistical analysis

Data entry and statistical analysis were carried out using SPSS version 26 software. Qualitative variables were expressed as percentages or effectives. Quantitative variables were expressed by their means, standard deviations and extremes. Qualitative variables were compared using Pearson's chi-square test. Comparisons between qualitative and quantitative variables were made using Student's T-test. The significance level was set at 5% ($p \leq 0.05$).

III. Results

Sociodemographic, clinical and therapeutic :

The mean age was 38 ± 7 y, predominantly male. The majority were single (69%), 22.3% married, 7.7% divorced and 0.3% widowed. Most lived in urban areas, and more than half had not attended secondary school. 2/3 of patients had no occupation. 92% lived with their families and 8% alone. 69.3% were on social welfare, and more than half had a poor social situation;

The average age of onset for both sexes was 24.1 ± 0.6 years. Productive and disorganized clinical forms were the most frequent. Clinical assessment using the PANSS scale found a mean of 70.2 at inclusion, and patients were judged to have moderate to moderate-severe impairment overall. The onset of the disorders was either acute or progressive, with the majority having a paranoid subtype and the disorganized subtype. The average duration of illness was over eight years ($8.9 \text{ years} \pm 1$). These patients were admitted to psychiatric care on average 2.6 ± 0.3 times per year. The mean duration of untreated psychosis was 4 ± 32 years, and there was no significant relationship with addictive comorbidity and schizophrenia ($p=0.132$).

In over half the cases (61%), the onset of the disorders was due to stressful life events and toxic intake. Half the patients (44.3%) were on monotherapy, mainly second-generation neuroleptics, and the other half were on combination therapy, particularly antidepressants;

Data on the abuse of psychoactive products :

Out of 300 patients with schizophrenia, 62.75% had a substance abuse problem (Fig.1) ;

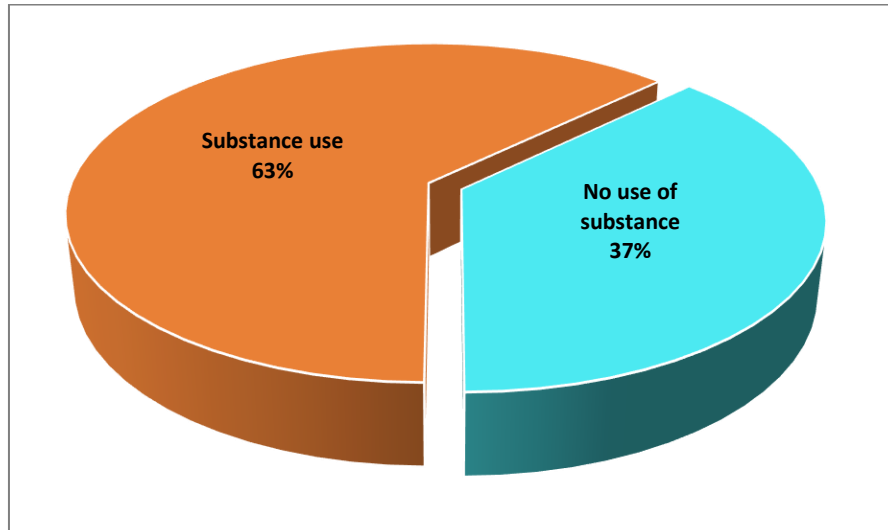


Figure 1: Distribution of patients according to substance use

Tobacco consumption was predominant, accounting for 51%, followed by cannabis (16.7%) and alcohol (8.7%). The remainder of consumption was in the form of cannabis + tobacco, then alcohol + psychotropic drugs, and finally tobacco + cannabis + alcohol (Fig. 2). There was a significant relationship between substance use, particularly tobacco and cannabis, and positive schizophrenia symptomatology ($p=0.000$).

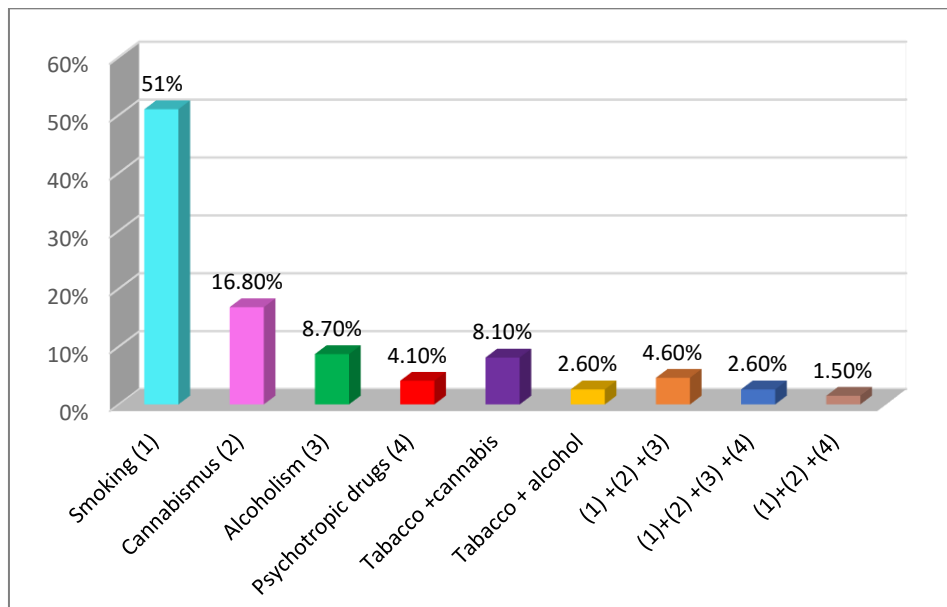


Figure 2: Distribution of patients according to toxic habits

- In our sample, women were not concerned by toxic intake, apart from smoking tobacco in 1.01% of women;
- The age of onset of substance use in our population was 19 ± 3.8 years;
- As for the mode of onset of drug use, 58.1% of patients had started taking drugs before the onset of their disorders, compared with 41.9% after the onset of their disorders;
- Progressive onset and the paranoid form of schizophrenia were most common among substance users (Fig.3);

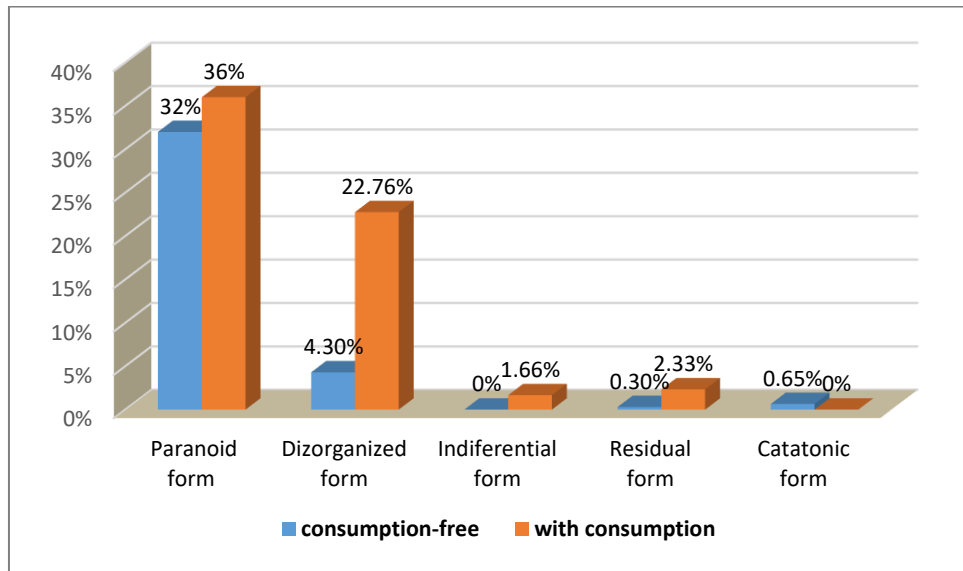


Figure 3: Distribution of toxic habits by clinical form of schizophrenia

- The average duration of addiction was 182 months for tobacco and 65 months for cannabis, alcohol 32 months, 71 months for associations and 16 months for psychotropic drugs (Fig. 4);

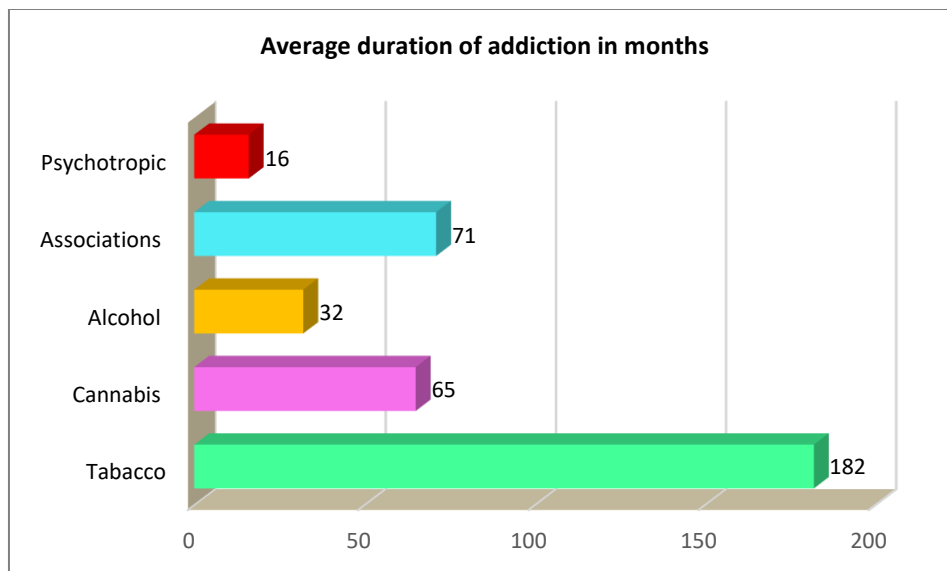


Figure 4: Distribution of patients by average duration of addiction in months

- Among the reasons for non-adherence to treatment, substance abuse accounted for 12%;
- Among comorbid patients, 14% had a history of suicide attempts (SA), an average of 2.3+/-0.6 SA per patient, and nearly half had associated depressive disorders;
- Among comorbid patients, 29.6% were severely dependent, 25% moderately dependent and 8.15% mildly dependent. The majority of substance users preferred smoked drugs, and most of them had bought their substance from welfare or relatives, rarely from theft (4%).
- Quit attempts Apart from smoking, a minority of users (18%) had tried to quit at least once. Three of them had succeeded. The effects of the substance most frequently sought in this population category are shown in Table 1 below.

Table 1: Breakdown of patients by effect sought for toxic consumption

The effects sought by the person	Number of cases
- Sleep	12,7%
- Reducing anxiety	22,8 %
- Communicating better, uninhibited	19%
- Treatment (hallucination, delirium...)	14,5%
- Forgetting difficult situations	7,9%
- Relax, unwind	16,1%
- Changing your state of consciousness	7%
TOTAL	100%

IV. Discussion

At the end of our research work, our results show a frequency of schizophrenia and drug addiction comorbidity of 62.75%, which is in line with the results reported in the literature. Notably the results of the Epidemiologic Catchment Area (ECA) study in 1990^[1] and the study by Verdoux H and al 1996^[10], which found a prevalence of comorbidity of almost 50%. In our study, tobacco use predominated, followed by cannabis use, then alcohol and then associations. These schizophrenic patients differ from non-users in that they are over-represented among males, have an earlier age of onset of schizophrenia (19 years), are unmarried, have no occupation, have less than a secondary education and live in precarious social conditions. Our results are in line with studies of comorbidity and schizophrenia^[11-12].

Progressive onset of illness is more common among substance users, as is the paranoid form of schizophrenia. This is in line with the majority of studies^[11-13], which show that substance abuse precedes schizophrenia in two-thirds of cases. In fact, half began using drugs before the onset of schizophrenia, and the other half after. With regard to the duration of untreated psychosis, the results of our study showed no significant link between schizophrenia and addictive comorbidity, which was fully in line with the meta-analysis by Burns et al. (2012)^[13], nine studies were identified with a total of 1,726 patients. The aim of this meta-analysis was to determine whether substance use is related to the duration of untreated psychosis. The results showed no significant link between substance use and the duration of untreated psychosis.

The mode of intake is that of dependence, which is in line with findings in the literature reporting that schizophrenics develop tobacco and cannabis dependence more rapidly than the general population (study by Di forti et al. 2009^[14]). Early cannabis use considerably increases the risk of schizophrenia. The risk is 4 times higher when consumption begins before the age of 15^[4] suggesting the need to take into account the developmental dimension in interaction with the genetic and environmental mechanisms involved in vulnerability to schizophrenia.

The main motivations reported by patients were for anxiolytic purposes, to escape hallucinations and to be more sociable, which is in line with the results of Comorbidity studies reporting similar reasons^[15]. The majority of patients did not undergo withdrawal treatment.

The risks of addictive comorbidity:

In our study, the risks of addictive comorbidity appear to be at the root of a number of complications, notably non-adherence to neuroleptic treatment, which was the cause of relapse in 12% of cases, with an average of almost three hospitalizations per year. Suicide attempts occurred in 14% of cases, with an average of 2.3+/-0.6 suicide attempts per patient, and almost half had associated depressive disorders, which explains the therapeutic association with antidepressants in the majority of our patients. Our results concur with those of several studies in the Smith 2008^[16] literature. Indeed, all studies show that long-term use of addictive substances, particularly cannabis, aggravates schizophrenic disorders, accelerating their course, with more abrupt and earlier decompensation, more relapses, less compliance with treatment, depression, therapeutic resistance to antipsychotics and a poorer prognosis^[3].

To assess the potential impact of substance abuse on the psychiatric symptoms of schizophrenia, several meta-analyses have been carried out. For example, the meta-analysis by Potvin et al. (2007)^[17], including 20 cross-sectional studies (n = 3283), showed that substance abuse is associated with an exacerbation of depressive symptoms in schizophrenia, with resistance to treatment.

Other studies have asserted that substance abuse prior to initial psychiatric care is a predictor of symptom severity^[18]. Consequently, among patients who do not respond to usual care, those suffering from comorbidity are over-represented. The societal and economic impact of treatment resistance in schizophrenia was assessed in a review of 65 studies conducted between 1996 and 2012^[19] and found that some patients do not respond to antipsychotic treatment after 23 weeks of treatment. They also found that the average quality of life of these patients was 20% lower than that of patients in remission, and 44% of them had suicidal ideation, which is in line with the results of our study. The same study points out that annual costs for these patients are 3 to 11 times higher than for responders. Yet more than half of "non-responder" patients have characteristics associated with heavy

smoking, alcohol abuse and substance abuse. Thus, the contribution of addictive comorbidity to the failure of usual treatment is considerable. Other studies have shown that the relative risk of developing schizophrenia is multiplied by four in regular cannabis users^[20]. Current research is focusing on the mechanisms and brain structures common to schizophrenia and drug addiction, particularly those involving the endocannabinoid system^[21].

Indeed, a number of factors have been identified by several studies in the literature to explain the mechanisms of this high comorbidity. The hypothesis of a genetic vulnerability common to both disorders has been proposed. This is supported by the observation of a shared heredity, with a high rate of addiction problems among non-psychotic relatives of schizophrenic patients, and a high rate of schizophrenia among relatives of addicts^[16].

Addicts and psychotic patients (precariousness, isolation, acculturation, etc) also share many social and economic factors.^[22] Psychological vulnerability is the subject of much research into the links between schizophrenia and cannabis.

In summary, three main models have been proposed to account for the frequency of this comorbidity. The first is the self-medication model, which suggests that schizophrenics use psychoactive substances to alleviate certain key symptoms, such as negative ones. The second is the vulnerability model, according to which substance abuse can trigger latent psychoses and aggravate manifest psychoses. Finally, the common factors model, according to which factors common to psychosis and drug addiction, particularly personality, environment, genes, neurotransmitters and others, are at the root of psychosis and drug addiction^[23-24]. However, current knowledge of the neurobiological underpinnings remains poorly supported. Nevertheless, it is now known from developments in neuroscience that nicotine, alcohol, cannabis and other drugs interact with dopaminergic, glutamatergic and GABAergic transmission, mechanisms which are also involved in the pathophysiology of schizophrenia^[25].

The adverse effects on brain structures and functions have been demonstrated especially in patients for whom alcohol is the primary substance. Current literature suggests that the cognitive functions of dual diagnosis patients are less impaired than those of non-abusers suffering from schizophrenia. To our knowledge, there are no studies evaluating the treatment of addictions and psychosis in comorbid patients^[4]. With regard to therapeutic perspectives, several integrated care modalities combining schizophrenic and addictive treatments have been developed in recent years, notably motivational interviewing and cognitive-behavioural therapies (CBT).

A Cochrane Review^[26] of 32 trials involving a total of 3,165 participants examined the efficacy of these different therapeutic approaches. Finally, psychoeducation is an interesting alternative in the treatment plan to better explain to patients and their families the complications of toxic intake in concomitance with schizophrenia.

V. Conclusion

The comorbidity of substance abuse and schizophrenia is now a real public health problem, constantly challenging researchers to understand the links between this comorbidity and to question the inadequacy of treatment methods. In fact, all studies show that long-term use of psychoactive substances aggravates schizophrenic disorders, accelerating their evolutionary course, with more abrupt and earlier decompensation, more relapses, less compliance with treatment and a poorer prognosis. Hence the importance of identifying this comorbidity early and managing it with specific therapeutic approaches, in the hope of improving the prognosis of patients suffering from schizophrenia. Indeed, the management of patients suffering from the dual diagnosis of schizophrenia and addiction requires integrated care and efficient coordination between professionals.

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