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The need to improve detection and treatment of physical pain of homeless people with schizophrenia and bipolar disorders. Results from the French Housing First Study

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ABSTRACT

Objective: The aim of this study was to investigate the prevalence and associated factors of physical pain in a large multicenter sample of Homeless Schizophrenia and Bipolar (HSB) patients.

Methods: This multicenter study was conducted in 4 French cities: Lille, Marseille, Paris and Toulouse. Pain was measured by EQ5D-3 L questionnaire with no specified period or location. In addition, sociodemographic information, duration of homelessness, illness severity using the Modified Colorado Symptom Index (MCSI) and drug information were collected.

Results: Overall, 655 HSB patients, mean age 38.8 years and 82.6% men were included, 448 (68.9%) were diagnosed with schizophrenia and 202 (31.1%) with bipolar disorder. More than half patients (N = 337, 51.5%) reported moderate to extreme physical pain while only 2.7% were administered analgesic drugs. In the multivariate analysis, self-reported moderate to extreme physical pain was associated with antidepressant consumption (adjusted odd ratio aOR = 2.56[1.25;5.26], p = .01), female gender (aOR = 1.72[1.03;2.86], p = .04), bipolar disorders (vs. schizophrenia) (aOR = 1.81[1.19;2.77], p = .006), older age (aOR = 1.03 [1.01;1.05], p = .01), with higher MCSI psychotic score (a0R = 1.04[1.01;1.06],p = .002), independently of the number of days in the street during the last 180 days, MCSI depression score, alcohol and substance use disorders, psychotropic drugs and analgesic treatments. No association with education level, antipsychotics, mood stabilizers, anxiolytic, hypnotic or medication adherence was found (all p > .05).

Conclusion: Physical pain was highly reported in homeless patients with severe mental illness with insufficient care. Physical pain should be systematically explored and treated in this population. Bipolar disorders, antidepressant consumption and female gender may be targeted in priority. Age and psychotic symptomatology were found to influence self-reported pain in a marginal way.

1. Introduction

Schizophrenia (SZ) and Bipolar Disorders (BD) are over-represented in homeless populations compared to non-homeless populations. The management of Homeless Schizophrenia or Bipolar Disorders (HSB) patients is challenging because this sub-population of homeless people is among the most vulnerable and hardest to reach (Auquier et al., 2013).

SZ and BD patients are underdiagnosed and undertreated with high rates of physical comorbidities (Correll et al., 2017; Godin et al., 2015; Vancampfort et al., 2016a, 2015). SZ patients are twice more likely to report chronic pain in comparison to healthy controls (Birgenheir et al., 2013). It remains currently unknown how many SZ patients have pain issues (Brendon Stubbs et al., 2015b). In a recent French cross-sectional study, 22% of SZ subjects reported moderate to high rates of physical pain (Fond et al., 2018b). SZ individuals may have a higher pain threshold (for review see (Engels et al., 2014)). Mood disorders and especially bipolar disorders have been extensively associated with

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increased physical pain (B. Stubbs et al., 2015). Antidepressants and anxiolytics are both frequently prescribed in schizophrenia and bipolar disorders (Fond et al., 2017a) and have been associated with respectively pain relief (Gebhardt et al., 2016) and pain improvement in chronic medical conditions (Abdel Shaheed et al., 2017). In summary, while physical pain may deeply impact quality of life, adherence into treatment, depression, functioning and recovery, little is known about self-reported pain prevalence and management in SZ and BD housed people, and even less is known about that in the HSB.

The aim of this study was therefore to investigate the prevalence of self-reported physical pain and associated factors in a large multicenter sample of HSB subjects.

2. Methodology

2.1. Study design and population

The French Housing First program was a multicenter randomized controlled trial conducted in 4 large French cities: Lille, Marseille, Paris and Toulouse (Tinland et al., 2013). The inclusion criteria were as follows: age over 18 years; absolute homelessness (i.e., no fixed place to stay for at least the past 7 nights with little likelihood of finding a place in the upcoming month) or precarious housing situation (housed in single-room occupancy, rooming house, or hotel/motel as a primary residence AND a history of 2 or more episodes of being absolutely homeless in the past year OR one episode of being absolutely homeless for at least 4 weeks in the past year); diagnosis of SZ or BD by a psychiatrist based on the Diagnostic and Statistical Manual of Mental Disorders, 4th ed. (DSM-IV-TR) criteria (American Psychiatric Association, 2000); and the ability to speak French. Mobile mental health outreach teams recruited patients from August 2011 to April 2014 in the street, emergency shelters, hospitals and jails. Psychiatrists and research assistants performed the evaluations during face-to-face interviews in the offices of the mobile mental health outreach teams, which were located in the downtown area of each city. The current analysis comprised only baseline data (t0, before any intervention) for HSB patients who have completed the EQ5D-3 L questionnaire.

2.2. Data collection

The following data were collected:

- Pain measure (EQ5D-3 L questionnaire). The EQ5D-3 L is a patient-reported outcome measure including five dimensions: mobility, self-care, usual activities, pain/discomfort and anxiety/depression, and each dimension has three levels (no problem, some problems, extreme problem). This questionnaire was developed by the EuroQol Group, a network of international multidisciplinary researchers devoted to the measurement of health status (van Hout et al., 2012). The EQ5D has been validated in SZ individuals (König et al., 2007). The subjects were classified in the “pain group” if they reported moderate to extreme pain level (EQ-5D-3 L pain score ≥ 2) (Fond et al., 2018a,b).
- Sociodemographic information: gender, age, education level, duration of lifetime homelessness, number of days in the street in the last 180 days.
- Illness characteristics: perceived mental health was assessed with the Modified Colorado Symptom Index (MCSI) (Conrad et al., 2001). The MCSI contains 14 items that address how often in the past month an individual has experienced a variety of mental health symptoms, including psychotic and depression subscores. Higher scores indicate a greater likelihood of mental health problems. Substance use was assessed with section L of the MINI (Sheehan et al., 1998), and alcohol consumption was evaluated with the Alcohol Use Disorders Identification Test (AUDIT) (Saunders et al., 1993).
- Drug information: drug class (antipsychotic, mood stabilizers, antidepressant, anxiolytic, analgesic, opioid substitute) and adherence assessed with the French version of the Medication Adherence Rating Scale (MARS) (Fond et al., 2017b; Zemmour et al., 2016) were reported. The MARS is a 10-item, multidimensional, self-reporting instrument that describes a global level of adherence (index). Higher scores indicate a higher likelihood of medication adherence.

2.3. Statistical analysis

All variables are presented using measures of means and dispersion (standard deviation) for continuous data and frequency distribution for categorical variables. The data were examined for normal distribution with the Shapiro-Wilk test and for homogeneity of variance with the Levene test. Univariate associations between demographic and clinical characteristics of patients with self-reported moderate to extreme pain were performed using the chi-square test for categorical variables. Continuous variables were analyzed with Student *t*-tests for normally distributed data and Mann-Whitney tests in case of non-normal distributions.

A multivariate logistic regression including age, gender, number of days in the street during the previous 180 days and all variables associated with self-reported pain in univariate analysis (with $p < .2$) was performed to estimate the adjusted Odds Ratio (aOR) and its corresponding 95% confidence interval (CI) for an association between demographic and clinical characteristics of patients with moderate to extreme pain levels.

All of the tests were two-sided. Statistical significance was defined as $p < .05$. Statistical analysis was performed using the SPSS version 20.0 software package (SPSS Inc., Chicago, IL, USA). This study was a confirmatory analysis. The hypothesis was that moderate to extreme pain levels were associated with higher psychotic and depressive symptoms levels, lower antidepressant and anxiolytic consumption, with higher addictive behaviors and with lower analgesic consumption. No correction for multiple testing has been therefore carried out, consistently with recommendations (Bender and Lange, 2001).

2.4. Ethical approval

The study was conducted in accordance with the principles of the Declaration of Helsinki, 6th revision. All participants provided written consent. The local ethics committee (Comité de Protection des Personnes Sud-Méditerranée V, France: trial number 11.050) and the French Drug and Device Regulation Agency (trial number 2011-A00668–33) approved the study.

3. Results

In total, 655 HSB patients were included in this study. Their sociodemographic and clinical characteristics are presented in Table 1. The mean age of the sample was 38.8 years (standard deviation = 10.0), and 82.6% were men, 448 (68.9%) were diagnosed with SZ and 202 (31.1%) with bipolar disorders. More than half of patients ($N = 337$, 51.5%) reported moderate to extreme physical pain. Only 269 (60%) of the SZ patients were administered antipsychotics, and 38 (24.1%) of the BD patients were administered mood stabilizers.

The results of univariate and multivariate analyses are presented in Table 1. Among patients treated by antidepressants, 39 (7.7%) were treated with selective-serotonin reuptake inhibitors (SSRI) and 12 (1.8%) with norepinephrine and serotonine reuptake inhibitors (NSRI). Overall, only 8 (1.2%) patients were administered ladder 1 analgesic (paracetamol) and 8 patients ladder 2 or 3 analgesics and 2 patients had no drug class information. Four patients (0.8%) were administered low-dose aspirin and 2 (0.4%) corticoids; none of these anti-inflammatory drugs was associated with lower rate of reported physical pain.