

Second, we aimed to improve the prediction by including information from intermediate visits (1, 3, and 6 months), mimicking more closely the clinician's way of thinking and the multiple observations a patient receives.

**Methods:** A sample of 163 BD patients (53% females, mean age 44.7, SD 15.3) were recruited.

Based on EHR, **56 clinical and demographic features were extracted, including hospitalizations, suicidal behaviors lifetime and in the last 12 months**, along with comorbidity, family history, work, and therapies. **Patients were followed up for 12 months.**

Support Vector Machine (SVM) was used to differentiate subjects who attempted suicide versus those who did not **in a 12-month time window**, within a repeated nested Cross-Validation. The SVM was optimized weighting the hyperplane for uneven group sizes. Then, **we repeated the analysis including information from intermediate visits** (1, 3, 6 months after the first contact). **For each visit, we created a composite score** based on current therapy, new admissions, and ER presentations. To avoid circularity, all the information (ER, admission etc.) related to a suicide attempt were not included.

**Results:** During the 12-months follow-up, **9.8% of patients attempted suicide.** The results from the 12-months suicide prediction model obtained an Area Under the Curve of 0.71 (with a Balanced Accuracy (BAC) of 68%).

**After incorporating the composite scores based on intermediate visits in the model, the prediction raised** to an Area Under the Curve of 0.78 (BAC 73%), suggesting that including intermediate visits is a valid method to improve prediction.

The features that contributed the most to the prediction were **the composite score at 6-month visit, lifetime number of suicide attempts, suicide attempts in the last 12 months, substance of abuse** (other than cannabis), and antipsychotics.

**Conclusions:** ML proved a good prediction accuracy for suicide in a 12-months time window, and the prediction was improved by including data from intermediate visits. **The model showed the importance of time-dependent features, such as attempts in the last 12 months.** Our analysis might help in identifying early clinical risk factors and underlies **the importance of multiple evaluations in populations at risk.**

**Disclosure of Interest:** None Declared

## EPP0615

### Suicidal behavior in homeless population and its relationship with experienced aggressions: A seven-year longitudinal study.

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**Introduction:** Suicide is a serious and complex public health issue that affects millions of people worldwide. Among the most

vulnerable populations are homeless individuals (HIs), whose suicide rate is significantly higher than that of the general population.

**Objectives:** The aim of this study was to analyze mortality and suicidal behavior in a cohort of HIs during a seven-year follow-up. Additionally, the study sought to identify variables linked to mortality in this population.

**Methods:** The study was conducted in the province of Girona, Spain, and included 154 HIs who were literally experiencing homelessness. Self-report questionnaires were used to gather sociodemographic data, assess suicide risk, and measure the severity of substance dependence. The follow-up was carried out between 2015 and 2022, collecting data on mortality, suicide attempts, episodes of overdose, and violence experienced from public health services (psychiatric and primary health care services).

**Results:** During the seven-year follow-up, 23 individuals (14.3% of the sample) passed away, with an average age at the time of death of 52.6 years. The main causes of death were cancer, suicide (excluding overdose), and accidental overdose. Methods used for suicide included drug overdose, jumping, and vein slashing. All deceased individuals had scores above the threshold on the Plutchik Suicide Risk Scale and had reported previous suicide attempts.

Individuals who experienced violence during the follow-up period exhibited more severe suicidal ideation, more suicide attempts, and more non-lethal overdose episodes. Substance dependence, particularly cocaine dependence and dual pathology, was significantly associated with higher mortality.

**Conclusions:** This study reveals a high mortality rate among HIs, especially due to suicide and accidental overdose. The most significant variables related to mortality were suicidal ideation, the number of previous non-lethal overdoses, and substance use disorders, with cocaine dependence being prominent. The results underscore the need for specific prevention and treatment programs to address suicide risk factors and improve the mental health of homeless individuals. The importance of conducting interventions in specialized centers that detect and address suicide risk in this vulnerable population is also emphasized.

**Disclosure of Interest:** None Declared

## EPP0616

### Certain immune parameters may have a significant impact on suicidal behaviour - a naturalistic study among psychiatric in-patients

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**Introduction:** Several research already proved the role of certain immunological factors (neutrophil-lymphocyte (NLR), monocyte-lymphocyte (MLR) and platelet-lymphocyte (PLR) ratio, and C-reactive protein (CRP)) in the background of suicidal behaviour.

**Objectives:** The aim of this research was to study the association between routinely measurable low-grade inflammation parameters