disorders. Recent studies analysing the association between daily levels of air pollutants and hospital admissions for mental disorders showed significant results for different pollutants considered both for admissions for generic mental disorders and for specific diagnoses such as schizophrenia, depression and substance abuse. Aim of the present study is to investigate the associations between daily levels of air pollutants (particulate matter, ozone, carbon monoxide, nitrogen dioxide) and daily admissions for mental disorders to the emergency department of two general hospitals in Umbria region (Italy).

**Methods:** We collected data about daily admissions to psychiatric emergency services of two general hospitals, daily levels of respirable particular matter (PM10 and PM2.5), ozone (O3), carbon monoxide (CO), nitrogen dioxide (NO2), and meteorological data (daily average temperature, pressure, humidity, and maximum and average wind speed) for the time period 1 January 2015 until 31 December 2016 (731 days). We used air monitoring data for the different types of air pollutants which were averaged across up to 16 monitor stations dispersed in the region. We assessed the impact of an increase in air pollutants on the number of daily admissions using a time-series econometric framework.

**Results:** A total of 1860 cases of emergency department admissions for mental disorders were recorded over the study period. We observe a statistically significant impact of O3 levels on daily admissions. The estimated coefficient of O3 is statistically significant at the 1 percent level. According to our results, an increase of one μg/m³ of O3 concentration (relative to the average concentration of the last 20 days) results in 0.013 more admissions to the hospitals.

All other pollutants are not significantly associated with the number of daily admissions.

**Discussion:** We observed a statistically significant association of daily ozone levels and daily number of admissions to psychiatric emergency services. Ozone is a component of photochemical smog and a powerful oxidant, and is considered as one of the most important air pollutants. Ozone may have a relevant interference with CNS physiology, and its exposure may be linked to brain disease and contribute to inflammation and oxidative stress.

Ozone exposure may be considered a potential environmental risk factor for impaired mental health. Epidemiological studies found evidence that ozone exposure may affect autism spectrum disorders, lead to motor disorders and cognitive impairment, and have an influence on the incidence of depression and suicide. In recent studies ozone air levels showed an association with increased risk of an emergency department visit for depression. This is one of the first studies worldwide investigating the association between daily concentration of air pollutants and the daily number of visits to a psychiatric emergency unit. Our results add to previous literature on existing evidence for air pollution to have a role in the cause or worsening of mental distress and psychiatric disorders. Contrary to our hypothesis, we did not find a positive association between most of the air pollutants considered in our study. This is in contrast with previous literature on this subject.

This could be explained by the methodological limitations of our study.

The aim was to identify individual-level predictors for becoming homeless and exiting homelessness in a systematic review and meta-analysis.

**Methods:** We searched PubMed, EMBASE, PsycINFO, and Web of Science (up to January 2018). Becoming homeless and exiting homelessness were the outcomes. Observational studies with comparison groups from high-income countries were included. The Newcastle Ottawa Quality Assessment Scale was used for bias assessment. Random effects models were used to calculate pooled odds ratios (ORs). In all, 116 studies of predictors for becoming homeless and 18 for exiting homelessness were included.

**Results:** Psychiatric problems, especially drug use problems (OR 2.9, 95% confidence interval (CI) 1.5–5.1) and suicide attempts (OR 3.6, 95% CI 2.1–6.3) were associated with increased risk of homelessness. However, the heterogeneity was substantial in most analyses (I²>90%), and the estimates should be interpreted cautiously. Adverse life-events, including childhood abuse and foster care experiences, and past incarceration were also important predictors of homelessness. Psychotic problems (95% CI 0.4, 0.2–0.8; I²=0) and drug use problems (OR 0.7, 95% CI 0.6–0.9; I²=0) reduced the chances for exiting homelessness. Female sex and having a partner increased the changes of exiting homelessness.

**Discussion:** Evidence for several psychiatric predictors for becoming homeless and exiting homelessness was identified. Additionally, sociodemographic factors, adverse life-events, and criminal behavior were important factors. There is a need for more focus on psychiatric vulnerabilities and early intervention to reduce the risk of homelessness.

**T127. GENDER DIFFERENCES IN CLINICAL PRESENTATION AND ILLICIT SUBSTANCE USE DURING FIRST EPISODE PSYCHOSIS: AN ELECTRONIC CASE REGISTER NATURAL LANGUAGE PROCESSING ANALYSIS**

Jessica Irving*,1, Craig Colling*,2, Hitesh Shetty*,3, Megan Pritchard*,1, Robert Stewart*,1, Paolo Fusar-Poli*,1, Philip McGuire*,1, Rashmi Patel1

1Institute of Psychiatry, Psychology and Neuroscience, King’s College London; 2South London and Maudsley NHS Foundation Trust

**Background:** Gender differences in the clinical presentation of first episode psychosis (FEP) and its relationship to illicit substance use are inconclusive and underexplored. We conducted an electronic health record (EHR) study applying natural language processing (NLP) techniques to investigate gender differences in psychiatric symptoms when controlling for age, ethnicity, and illicit substance use.

**Methods:** Data were extracted from EHRs of 3,340 people presenting to the South London and Maudsley (SLaM) NHS Trust between April 2007 and March 2017 with FEP. Logistic regression was used to examine gender differences in presentation of 42 psychiatric symptoms, grouped into positive, negative, depressive, mania and disorganisation symptoms. We controlled for age of onset, ethnicity and illicit substance use (cocaïne, amphetamine, MDMA or cannabis) and adjusted p-values for multiple comparisons.

**Results:** Patients were predominantly male (62%). Eight symptoms were more prevalent in males (poverty of thought, negative symptoms, social withdrawal, poverty of speech, aggression, grandiosity, paranoia and agitation), and thirteen in females (tearfulness, low energy, reduced appetite, low mood, pressured speech, mood instability, flight of ideas, guilt, mutism, insomnia, poor concentration, tangentiality and elation), before adjustment for age, ethnicity and substance use. Male patients were significantly more likely to experience negative symptoms than females (e.g. poverty of thought, OR 1.85, 95% CI 1.33 to 2.62); female patients showed increased likelihood of depressive and manic symptoms (e.g. tearfulness, 0.30, 0.26 to 0.35). Male patients were significantly more likely to misuse amphetamines,
cannabis and cocaine (e.g. cannabis, OR 3.18, 2.75 to 3.70). All significant differences survived controls for age and ethnicity. After adjustment for illicit substance use gender differences in aggression, agitation, paranoia and grandiosity became insignificant (p > 0.05). However, adjustment for illicit substance use resulted in increased strength of gender associations with negative, manic and depression symptoms.

**Discussion:** There are clear gender differences in the clinical presentation of FEP which are modified by exposure to illicit substances. These findings highlight a need to better understand the impact of gender on clinical presentation and treatment outcomes in psychosis, and to ensure that clinicians are aware of how gender differences in presentation could be modified by illicit substance use.

---

**T128. ATTACHMENT REPRESENTATIONS IN CHILDREN AT FAMILIAL HIGH RISK OF SEVERE MENTAL DISORDERS. ASSOCIATIONS WITH PSYCHOPATHOLOGY, LEVEL OF FUNCTIONING, AND PSYCHOTIC EXPERIENCES**

Maja Gregersen1, Ditte Vestbjerg Ellersgaard1, Anne Sondergaard1, Camilla Christiani1, Nicoline Hemager1, Katrine Soborg Spang2, Birgitte Klee Burton2, Md Jamal Uddin1, Jessica Ohland1, Ditte Gantris3, Aja Greve3, Ole Mors1, Kerstin Jessica Plessen4, Merete Nordentoft1, Lars Clemmensen1, Jens Richardt Mollegaard Jepsen1, Anne Amalie Elgaard Thorup2

1Copenhagen Research Centre for Mental Health, Mental Health Services in the Capital Region of Denmark, Mental Health Centre Copenhagen; 2Mental Health Services in the Capital Region of Denmark, Child and Adolescent Mental Health Centre; 3Aarhus University Hospital; 4University Hospital, Lausanne; 5Center for Telepsychiatry, Mental Health Services, Region of Southern Denmark

**Background:** There is evidence of higher rates of insecure and disorganized attachment in infancy in children born to parents with severe mental disorders, but evidence on attachment in middle childhood for these children is lacking. This study aims to explore attachment representations in seven-year-old children born to parents with schizophrenia or bipolar disorder. We also aim to explore possible associations between attachment and psychopathology, level of functioning, and psychotropic experiences in these children.

- We expect that children at familial high risk will have the highest levels of insecure and disorganized attachment. We expect that population based controls will have the lowest levels of insecure and disorganized attachment and higher levels of security than children at familial high risk.
- We expect higher levels of insecure and disorganized attachment to be associated with an increased risk of psychopathology, and psychotic experiences and with lower levels of functioning, whereas we expect higher levels of secure attachment to be associated with a lower risk of psychopathology, and psychotic experiences, and with higher levels of functioning.

**Methods:** The Danish High Risk and Resilience Study VIA 7 is a prospective cohort study of 522 seven-year-old children born in Denmark. The cohort consists of children where one or both parents have been diagnosed with a schizophrenia spectrum disorder (N=200), children where one or both parents have been diagnosed with bipolar affective disorder (N=120) and children where neither of the parents have been diagnosed with these disorders (N=200). Attachment representations were assessed with the Story Stem Assessment Protocol whereas psychopathology, level of functioning, and psychotic experiences were assessed with K-SADS.

**Results:** Data analyses are ongoing but preliminary results indicate that there are no significant differences in attachment representations between the three groups of children, but that there are associations between higher rates of insecure and disorganized attachment and a higher risk of psychopathology. Results will be presented at the SIRS-conference.

**Discussion:** Understanding attachment and its correlates in children at familial high risk of severe mental disorders is important in order to strengthen our understanding of developmental trajectories towards mental disorders in these children.

---

**T129. PHARMACOLOGICAL INTERVENTIONS IN TRIALS OF PEOPLE WITH SCHIZOPHRENIA: A REGISTER-BASED CLASSIFICATION OF SEVENTY YEARS OF RESEARCH**

Farhad Shokraneh*1

1School of Medicine, University of Nottingham

**Background:** Drug development is a billion dollar business globally. It is crucial to stay up to date on drug developments all over the world any repetition will be irreversible waste of resources. The only way to keep up with all the development is to keep a living database of all trials running for each condition and covering all studies from every country in any language. An Information Specialist collects and classifies all pharmacological interventions from all schizophrenia trials.

**Methods:** Cochrane Schizophrenia’s Study-Based Register was developed and used as the source of trials. Emtree and MeSH for synonyms, AdisInsight and CT.gov for research drugs and WHO ATC for marketed drugs. This research took four years from 17 December 2014 and 6 January 2019 and involved 18,500 randomized controlled trial from 90 countries in 23 languages.

**Results:** One third of tested interventions on patients with schizophrenia are pharmacological (816; belonging to 106 clinical classes) with antipsychotic drugs being the most researched (15.1%). Only 528 of these medications are listed in WHO ATC. Around one third of these drug interventions are seen only in research (236; from 21 pharmacological/biochemical classes). Within the pharmacological evaluations we identified 28 ‘qualifiers’ including dose, route, and timing of drug delivery. Using Data Science approaches, this research revealed unique antipsychotic drugs that are being prescribed only in certain countries such as Japan but the West is not aware of them. This research is also revealed all the research drugs and current trends in developing drugs in pharmaceutical companies.

**Discussion:** Classification of medication interventions from trials requires use of many sources of information none of which are inclusive of all drugs. Without a global search in all languages the pharmaceutical companies and researchers are missing important successful developments from non-English speaking world. The cycle of developing research/withdrawn drugs does not stop and may end in veterinary medicine, doping agents in sports, and illicit drug market.

---

**T130. A SURVEY OF MENTAL HEALTH LITERACY USING THE INTERNET IN JAPAN**

Taiju Yamaguchi*1, Yoshiyo Oguchi2, Yasutaka Ojio3, Ryoichi Mori4, Minako Oooka1, Yoko Baba2, Tomoyuki Funatogawa3, Naoyuki Katagiri3, Naohisa Tsujino4, Takahiro Nemoto1, Masafumi Mizuno3

1School of Medicine, Toho University; 2St. Marianna University School of Medicine; 3National Institute of Mental Health, National Center of Neurology and Psychiatry; 4Tokai University

**Background:** Insufficient mental health literacy (MHL) of the general public is one of the major factors that prevent early intervention for mental illness. Insufficient MHL may exacerbate the stigma attached to people with mental illness. In Japan, there have been few large-scale surveys to