Results: Of the 569 patients enrolled in the PAFIP programme between 2001 and 2018, 59 met the criteria for BPD. Of those, 40 (67.8%) completed the 36-month follow-up and 16 (40%) maintained their initial BPD diagnosis. Among the patients who developed other mental disorders by the end of the study period (60%; n = 24), the proportion of transition to schizophrenia was 62.5% (n = 15). Being younger at psychosis onset, living alone, a poor premorbid adjustment, acute onset of psychotic symptomatology, and higher severity of hallucinatory behaviour were variables that showed univariate associations with subsequent development of schizophrenia. A multivariate logistic regression model revealed that transition to schizophrenia was independently significantly associated with younger age at psychosis onset (OR = 0.83, 95% CI 0.69–0.99; p = 0.048), living alone (OR = 14.3, 95% CI 1.09–186.77; p = 0.042) and greater hallucinatory activity (OR = 1.81, 95% CI 1.07–3.07; p = 0.028).
Discussion: Our main findings were that 37.5% of patients who presented an initial BPD diagnosis developed schizophrenia in the following 36 months. Being younger at psychosis onset, living alone and experiencing greater hallucinatory activity at baseline were independent predictors of diagnostic transition to schizophrenia in this BPD population. Individuals with BPD presenting these risk factors should therefore be targeted for intensive interventions similar to those performed on patients with first-episode schizophrenia.

M98. IS THERE A DEVELOPMENTAL TRAUMAGENIC PHENOTYPE OF PSYCHOSIS?

Michael Bloomfield*[1], Mustapha Modaffar[1], Franca Onyeama[1], Ting-Yun Chang[1], Joseph Dickson[1], Jo Billings[1]
[1]University College London

Background: Developmental trauma (DT) induces vulnerability to psychosis in adulthood. Adult survivors of DT with psychosis (ASDTP) have worse prognosis across a range of outcomes compared to individuals with psychosis without DT exposure. It has been suggested that this may reflect a developmental 'traumatogenic' psychosis phenotype, distinct from idiopathic schizophrenia. Given the implications for precision medicine, we therefore sought to test this hypothesis by conducting systematic reviews and meta-analyses of the literature comparing psychotic symptoms and neuroimaging findings between adults with psychosis diagnoses with and without developmental trauma.
Methods: We registered our search protocols in PROSPERO (CRD42018105021 and CRD42019131245). We systematically searched literature databases for relevant studies published up to July 2019. "Embase", "MEDLINE", and "PsychINFO" were systematically searched. Reference lists, OpenGrey, and Google scholar were hand-searched. Phenomenological outcomes of interests were quantitative and/or qualitative differences in psychotic symptom expression (primary outcome) and other domains of psychopathology (secondary outcome) between ASDTP and people with psychosis who did not report developmental trauma. Neuroimaging outcomes of interest including markers of brain volume and function (e.g. task-induced blood-oxygen dependent signal).
Results: Seventeen studies of symptomatology were included. Of these, four were meta-analysed. There was a relationship between DT and greater positive (Hedges g=0.53; p<0.001) and negative (Hedges g =0.41; p=0.001) symptom severity. ASDTP had greater neurocognitive deficits and symptom severity in other domains of psychopathology compared to individuals without DT. There was evidence that psychotic symptom content related to traumatic memories in those with experiences of DT. We identified twenty-seven imaging studies (n = 1,438 psychosis patients, n = 1,114 healthy controls or healthy siblings). DT was associated with global and regional differences in grey matter; corticolimbic structural dysconnectivity; a potentiated threat detection system; dysfunction in regions associated with mentalization; and elevated striatal dopamine synthesis capacity. Meta-analysis indicated that developmental trauma is associated with reductions of cortical thickness, global grey matter volume, and hippocampal volumes in patients with psychosis.
Discussion: Adult survivors of developmental trauma have more severe psychotic symptoms than those without developmental trauma histories. Alongside findings of differences in symptom expression and neuroimaging, the evidence suggests that there may be developmental traumatogenic psychosis phenotype. However, a key mechanistic gap remains how clinical and neuroimaging findings relate to each other. Nonetheless, alternative interpretations, such as an underdiagnosis of post-traumatic stress disorder, could also be plausible. These findings warrant further research to elucidate vulnerability and resilience mechanisms for psychosis in adult survivors of developmental trauma.

M99. INVESTIGATING THE BEST PREDICTIVE CLINICAL FEATURES OF ANTI-N-METHYL-D-ASPARTATE RECEPTOR (NMDAR) ENCEPHALITIS IN THE 2010 AUSTRALIAN NATIONAL SURVEY OF HIGH IMPACT PSYCHOSIS (SHIP) COHORT

Susan Rossell*[1], Denny Meyer[1], Cyndi Shannon Weickert[2], Andrea Phillipou[1], Cherrie Galletly[3], Vera Morgan[4], Carol Harvey[5], Paul Tooney[6], David J. Castle[7]
[1]Swinburne University of Technology; [2]Neuroscience Research Australia: Schizophrenia Research Laboratory; [3]The University of Adelaide; [4]University of Western Australia; [5]University of Melbourne; [6]University of Newcastle; [7]St. Vincent's Hospital/ University of Melbourne

Background: Anti-N-methyl-D-aspartate receptor (NMDAR) encephalitis, a recently reported autoimmune disorder, can be mistakenly diagnosed as a psychotic disorder, especially schizophrenia, as patients can present with prominent psychotic symptoms, in particular persecutory ideation, hallucinations and disturbed speech. In this study we used machine learning of the clinical data in a large cohort of persons with a positive psychosis history to ascertain whether we could predict NMDAR-positive cases, and which variables most accurately distinguished between NMDAR-positive and -negative cases.
Methods: SHIP collected nationally representative data from 1825 individuals with a psychotic illness. Plasma samples were available for n=472. To investigate the prevalence of NMDAR autoantibodies a recombinant indirect immunofluorescence test was performed (EuroImmun AG, Lübeck, Germany), with NMDAR transfected human embryonic kidney (HEK) 293 cells quantified using NIS Elements software. NMDAR-positive cases were estimated. Gradient boosting machine learning (the data were randomly split: 60% for initial ascertainment and 40% for validation) was subsequently performed using the clinical data available: 120 variables in total across various domains of sociodemographic, medical history, psychiatric diagnosis and current psychiatric symptoms. Only the variables found to have significant (or near significant) association with being NMDAR-positive were used to develop rules for identifying cases.
Results: There were 38 NMDAR-positive cases. They were more likely to be associated with a schizophrenia /schizoaffective and a depressive psychosis diagnosis, and less likely to be associated with a bipolar diagnosis, than antibody-negative cases. They were also more likely to be associated with a single episode with good recovery, and with anxiety symptoms and dizziness in the prior 12 months (which included light headedness, feeling faint and unsteady). For the present state symptoms, restricted affect was more likely to be present whereas poverty of speech was rare. Initial insomnia and a medical history that included epilepsy were not present for any of the NMDAR-positive cases. The machine learning algorithm was able to successfully classify 94% of cases to the correct antibody group.
Discussion: In this significant Australian epidemiological cohort, we have identified key clinical features associated with anti-NMDAR encephalitis, including diagnosis, and symptoms and clinical course. The novel and insightful analyses afforded by using machine learning should be replicated

in other samples to confirm the important clinical findings reported in the current work.

M100. LOOSELEAF: DEVELOPING A MOBILE-BASED APPLICATION TO MONITOR DAILY CANNABIS USAGE IN YOUTH AT CLINICAL HIGH-RISK OF PSYCHOSIS: APP DEVELOPMENT AND USABILITY TESTING

Olga Santesteban-Echarri*[1], Ga Hyung Kim[1], Preston Haffey[1], Jacky Tang[1], Jean Addington[1]
[1]*Hotchkiss Brain Institute, University of Calgary*

Background: Youth at clinical high risk for psychosis (CHR) often use cannabis, which can have a negative impact on their attenuated psychotic symptoms (APS). Our overall goal is to develop an app that will monitor cannabis use and its impact on APS. Objectives: (1) To describe the development of a mobile-based application named LooseLeaf (LL) to monitor daily cannabis use of individuals at CHR through participatory design; and (2) To test initial usability, discover and fix technical issues, and ensure correct data transmission of LL.
Methods: Two two-hour focus groups were run with CHR participants, age 12–30. Opinions of participants on (i) application content, (ii) graphic design, and (iii) user experience of the different features (i.e., home screen, inventory, questions, feedback, and calculator) were gathered from the first focus group. Based on the comments from the first focus group, a usable prototype of the application was created and was shown to the second focus group. The second focus group provided further feedback on the user experience of each feature, and finalized the application's name and logo. The focus groups were audio recorded and transcribed verbatim for analysis. Following Braun and Clarke's guidelines, data obtained from the focus groups was qualitatively analyzed with thematic analysis to identify patterns in responses. The application was refined accordingly. Then, six healthy controls and two CHR participants used LL for one week to test its effectiveness in monitoring cannabis use. On days that participants used cannabis they answered LL' questions about how much cannabis they used, how they used, their subjective emotional experience, and what their social and environmental context was during and after using cannabis. When they did not use cannabis, LL asked questions about their subjective emotional experience and how they felt about not using cannabis. LL included a bug-report feature that participants were encouraged to use when they encountered problems. Qualitative data about LL was gathered through the 23-item Mobile Application Rating Scale (MARS) covering questions about engagement, functionality, aesthetics, information provided, and subjective quality of LL. Descriptive statistics were calculated for the quantitative data from MARS.
Results: Participants favored a minimal and neutral design, buttons with icons, and color-coding of the emotions. Participants named the application "LooseLeaf" and helped to refine its features. The final design of the application consisted of 11 questions about cannabis consumption and feelings associated with it (i.e., euphoria, anxiety, and psychosis-like experiences). Over the one-week usability testing period, LL had an 85.7% response rate. The bug-report feature was used 13 times by seven participants to flag technical issues and provide suggestions to improve user experience of LL. The App received a good overall score on the MARS. LL's functionality, aesthetics, information, and safety rated high. Few customization options, lack of willingness to pay for applications in general, and technical issues resulted in lower engagement and subjective quality scores. LL's perceived impact score was good.
Discussion: The application's development process was based on the feedback of CHR youth. This provided important information on the design and content needed to build a user-centric mobile application. LL demonstrated initial usability, an effective bug-report feature, and some technical issues and problems with data transmission. The MARS, interviews, and bug-reports provided effective feedback for refining LL for the next phase of development.

M101. PREVELANCE USE OF TECHNOLOGICAL DEVICES AND INTERNET AMONG PATIENTS DIAGNOSED WITH SCHIZOPHRENIA AND SCHIZOAFFECTIVE DISORDER

Emine Ilgın Hoşgelen*[1], Berna Binnur Akdede[2], Koksal Alptekin[2]
[1]*Dokuz Eylul University;* [2]*Dokuz Eylül University, School of Medicine*

Background: Effective use of technology makes human life much easier nowadays. This use has become widespread in health and has gained functionality in many areas. Using technology-based interventions, it is possible to minimize the loss of psychosocial functionality and cognitive disability in schizophrenia, in which social cognitive disability is one of the most basic symptom clusters. The aim of this study is to determine the prevalence of technological devices and internet usage in patients with schizophrenia and schizoaffective disorder, to determine the attitude of patients towards technological devices and internet usage and the relation between technology, internet usage with clinical variables such as psychosocial functioning, positive and negative symptoms.
Methods: Data were collected from the patients who applied to Dokuz Eylül University Medicine Faculty Schizophrenia Outpatient Clinic. Eighty-three schizophrenia patients and 13 schizoaffective disorder patients who meet the schizophrenia and schizoaffective disorder diagnostic criteria of DSM-5 were included in the study. The sociodemographic data registration form was completed. A questionnaire was developed for the purposes of the research to evaluate the use of technology. The level of psychosocial functioning was assessed using the Personal and Social Performance Scale (PSP), and the positive and negative symptom severity was evaluated using the Positive and Negative Syndrome Scale (PANSS).
Results: The study found that 86% of patients owned mobile phone, 67% of patients used internet access, 67% of patients owned computer. 61% patients were using any kind of mobile application and 47% patients were using social media application. The most prevelant mobile applications among patients were facebook and whatsapp (48%). Younger patiens were using internet more than elders in a day (r=-0,395, p<0,001). Negative syptom scores were statistically lower among patients who were using mobile phones (M= 16,05, t=-2,50, p=0,014), internet connection in mobile phone (M=15,26, t=-2,93, p=0,004), using mobile application (M=15,47, t=-2,93, p=0,008), facebook (M=15,31, t=-2,32, p=0,022), whatsapp (M=14,77, t=-3,40, p=0,001), messenger (M=14,94, t=-2,33, p=0,022), messaging applications (M=14,96, t=-3,36, p=0,001), social media applications (M=15,04, t=-2,78, p=0,006) and who make video conversation (M=15,52, t=-2,21, p=0,029) than patients who were not using. PSP score of patients who were using mobile phone (M=50,62, t=2,34, p=0,021), internet access in mobile phone (M=57, t=3,07, p=0,003), mobile application (M=51,90, t=2,16, p=0,033), facebook (M=53,47, t=2,63, p=0,010), whatsapp (M=54,68, t=2,43, p=0,001), messenger (M=54,69, t=2,62, p=0,010), messaging applications (M=54,24, t=3,50, p=0,001), social media applications (M=54,29, t=3,10, p=0,003), and making video conversation (M=53,05, t=2,74, p=0,007) were statistically higher than the patients who were not using. There is also statistically significant relation between application usage and sub-items of PANSS.
Discussion: This study indicated that younger schizophrenia patients having less negative symptoms and increased psychosocial functionality was likely to use technological devices and mobile applications more. Patients may use applications more if they have been developed to facilitate their daily lives. Mobile applications and social media may affect the daily life activities of patients more intensively. In addition, using mobile applications may help patients to cope with their symptoms and improve psychosocial functioning.