develop a validated prediction model of need for provision of early intervention in psychosis [EIP] services at the small area level in England up to 2025, based on current epidemiological evidence and demographic projections of the at-risk population.

Methods: We developed a Bayesian population-level prediction tool. First, we obtained small area incidence data on first episode psychoses, aged 16–64 years, from three major empirical studies of psychosis risk (AESOP, ELFEP and SEPEA). Second, we identified suitable prior information from the published literature on variation in psychosis risk by age, sex, ethnicity, deprivation and cannabis use. Third, we combined this empirical data with prior beliefs in six Bayesian Poisson regression models to obtain a full characterisation of the underlying uncertainty in the form of suitable posterior distributions for the relative risks for different permutations of covariate data. Fourth, model coefficients were applied to population projections for 2017 to predict the expected incidence of psychotic disorders, aggregated to Commissioning Group [CCG] and national levels. Fifth, we compared these predictions to observed national FEP data from the NHS Mental Health Services Data Set in 2017 to establish the most valid model. Sixth, we used the best-fitting model to predict three nested indicators of need for psychosis care: (i) total annual referrals to early intervention in psychosis [EIP] for “suspected” FEP (ii) total annual cases accepted onto EIP service caseloads, and (iii) total annual new cases of probable FEP in England up until 2025, using small area population projections.

Results: A model with an age-sex interaction, ethnicity, small area-level deprivation, social fragmentation and regional cannabis use provided best internal and apparent validity, predicting 8112 (95% Credible Interval 7623 to 8597) individuals with FEP in England in 2017, compared with 8038 observed cases (difference: n=74; 0.94%). Apparent validity was acceptable at CCG level, and by sex and ethnicity, although we observed greater-than-expected need before 35 years old. Predicted new referrals, caseloads and probable incidences of FEP rose over the forecast period by 6.2% to 25,782, 23,187 and 9,541 new cases in 2025, respectively.

Discussion: Our translational epidemiological tool provides an accurate, validated method to inform planners, commissioners and providers about future population need for psychosis care at different stages of the referral pathway, based on individual and small area level determinants of need. Such tools can be used to underpin evidence-based decision-making in public mental health and resource allocation in mental health systems.

O1.4. HOW THE MOST CITED RESEARCH ARTICLES ABOUT SCHIZOPHRENIA IN 2018 DEPICT THE DISEASE?

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Background: Despite the progress in treatment and clinical outcomes, schizophrenia remains a highly stigmatized disease and imposes a challenge to families and patients towards recovery. Stigma can debilitating individuals as much as the disease itself, representing one of the most relevant obstacles to overcome the illness: it hinders the pursuit of autonomy and achievement of life goals. Stigma is complex and multilayered and its research usually focus on patients and society, but a lower number of studies address health professionals stigma. Even fewer investigate stigma of researchers. Thus, our objective is to analyze how the most cited research papers published in 2018 addressing schizophrenia depict the disease to identify putative stigma among researchers.

Methods: In this exploratory study, we conducted a search using Web of Science (WoS) with the following terms: (“patients with schizophrenia”) OR (“schizophrenia patients”). We restricted the search to articles published in 2018 and selected the 20 studies with the highest total number of citations. We identified how the authors defined schizophrenia and then categorized the definition in three groups: (1) negative perspective, in which deprecative words were used to define the disease; (2) neutral definition, in which emphasis is given to the description of epidemiological data; and (3) neutral to positive definition, when negative outcomes were listed as possibilities, not certainties. Two independent authors (G.K. and M.M.) categorized each article and eventual conflicts were solved by a third author (A.G.)

Results: 25% of the studies depicted a clearly negative perspective of schizophrenia. In these studies, the disease was described with words such as “devastating” and “highly disabling”. Most studies (60%) were coded as neutral, being mainly descriptive of current epidemiological data. Only 3 studies (15%) were identified as more favorable, since they acknowledged the possibility of better outcomes among patients with schizophrenia.

Discussion: In the current schizophrenia scientific literature, negative views of the disease are still largely common. Considering the role of highly cited papers as opinion formers, we suggest that as occurred in other fields, such as the change in address of suicide by the media, some orientation should be adopted to avoid further contributions to the schizophrenia stigma.

O1.5. CLUSTERING-BASED BEHAVIOURAL PHENOTYPES OF INTRINSIC MOTIVATION IN SCHIZOPHRENIA DETERMINED USING OBJECTIVELY QUANTIFIED REAL-WORLD PERFORMANCE

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Background: Intrinsic motivation (IM) deficits are a prominent feature of schizophrenia that substantially impacts functional outcome. Previous investigations have primarily assessed IM as a general construct or towards specific activities, but multifaceted examination of IM using objective and ecologically valid means has been lacking. The current study aimed to determine whether IM-driven real-world behaviours of individuals with and without schizophrenia reveal distinct behavioural phenotypes that predict differential clinical and functional profiles.

Methods: Forty-five stable adult outpatients with schizophrenia or schizoaffective disorder (SZ) and 47 healthy controls (HC), group-matched for age and sex, completed the study. Wireless motion capture was used to quantify participants’ behaviour (during two previously validated 15-minute open-field tasks) aligning with distinct aspects of IM: exploratory behaviour (in an unfamiliar setting that contained common and uncommon objects) and unincentivized activity engagement (under provision of explicit choice between active versus passive engagement options). Sparse k-means clustering was applied to task-derived indices of locomotion and object exploration, and activity duration, intensity, and persistence to identify behaviourally differentiable subgroups. Clusters were compared across standard clinical measures of general amotivation, cognition, and community functioning. Diagnostic group by cluster assignment interaction effects were evaluated to identify potential discrepancies in within-cluster SZ versus HC differences across clusters.

Results: Three clusters emerged: medium activity and low exploration (20 SZ and 19 HC), low activity and medium exploration (15 SZ and 8 HC), and high activity and exploration (10 SZ and 20 HC). Cluster assignment did not significantly predict diagnostic group (Fisher’s exact p=0.067) but indicated increased odds of diminished exploration or activity in SZ (odds ratio=2.57, p=0.047). General amotivation differed across clusters (F(2,89)=6.31, p=0.003) due to significantly elevated scores in the low exploration and low activity clusters versus the high performance cluster. Evaluation of the diagnostic group by cluster assignment interaction effect for amotivation (F(2,86)=3.12, p=0.062) revealed significantly higher scores in SZ versus HC within the low exploration and high performance clusters, but not the low activity cluster. Evaluation of the interaction effect...
for community functioning (F(2,86)=4.86, p=0.007) revealed significantly lower scores in SZ versus HC within all clusters, with the discrepancy increasing from high performance to low activity to low exploration.

**Discussion:** Multidimensional characterization of IM stands to provide valuable insights into motivation and functioning deficits in schizophrenia that behaviourally manifest differently across individuals. Impairment in IM-driven behaviour may be substantially detrimental particularly for individuals with schizophrenia, as SZ participants demonstrated clinically observable deficits even compared to within-cluster HC counterparts. The current lack of objective standards to measure IM underscores the benefit of behaviour-based characterization. Further, as IM has been deemed a valuable psychosocial intervention target in schizophrenia, multidimensional behavioural phenotyping may help guide personalized therapy by differentiating between IM impairments demanding amelioration versus unimpaired tendencies that may be leveraged to facilitate remediation.

**O1.6. AFFECTIVE DETERMINANTS OF LIFE-SPACE THROUGH GPS AND ECOLOGICAL MOMENTARY ASSESSMENT IN SCHIZOPHRENIA: WHAT GETS PEOPLE OUT OF THE HOUSE?**

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**Background:** Previous research employing global positioning satellite (GPS) data and ecological momentary assessment (EMA) has shown that greater aggregated time at home and less distance traveled (diminished life-space) were associated with poorer community functioning and with more severe negative symptoms in people with schizophrenia. Emotional experiences (e.g., pleasure or anxious avoidance) may reduce time spent outside of the home. We evaluated the associations between concurrent and time-lagged positive and negative affective experiences in relation to time at home and distance traveled in the community (life-space) among people with schizophrenia compared to healthy comparators (HCs).

**Methods:** Sixty HCs (mean age = 51.2, SD = 10.9) and 91 people with schizophrenia (mean age=52, SD=9), matched on demographic characteristics, completed in-lab assessments of symptoms, cognition, and functioning. They were then given a smartphone and completed EMA assessments 7 times daily for 7 days at stratified random intervals. EMA surveys included questions about daily life activities and affect. GPS coordinates were collected every 5 minutes, 24 hours a day, over the 7-day study period.

**Results:** Participants with schizophrenia spent more time at home than HCs (t = -4.95, p < 0.001). Sadness and ratings of relaxation were not associated with distance traveled away or time spent at home. For HCs, happiness was associated with more distance traveled away as measured by GPS (B=6.85, SE= 3.04, Wald Chi-Square = 5.067, p=0.024). However, for people with schizophrenia, only greater nervousness ratings were associated with more distance from home (B=3.41, SE=1.30, Wald Chi-Square=6.88, p=0.009). Moreover, for people with schizophrenia, greater nervousness ratings were associated with more time spent at home (B=2.07, SE= 0.98, Wald Chi-Square=4.43, p=0.035), and greater nervousness also predicted that a person with schizophrenia would be at home at the next survey in lead analyses, (F(1, 3029)=7.533, p=0.006). Taken together, these results suggest both greater nervousness associated with greater distance away from home and anxious avoidance of leaving the home.

**Discussion:** For individuals with schizophrenia, greater overall anxiety was associated with reduced time spent out of the home, and when patients did leave the home, greater distance travelled was associated with greater nervousness. In contrast, HC participants experienced greater positive emotion with larger life-space. These data suggest a significant momentary temporal association of anxiety and behavior in schizophrenia, such that greater nervousness predicted an individual would be more likely to stay at home. These findings suggest avoidance of negative emotion may also contribute to diminished motivated behavior, which may even act as an emotion regulation strategy. Life-space, which can be measured readily over time by mobile devices, may be a novel target for rehabilitative interventions for anxious avoidance in schizophrenia.

**O2. Oral Session: Brain Structure/ Connectivity**

**O2.1. LOCAL AND LONG-RANGE CONNECTIVITY PATTERNS OF AUDITORY PERCEPTUAL DISTURBANCE IN SCHIZOPHRENIA**

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**Background:** Auditory hallucinations are a prevalent, debilitating symptom of schizophrenia (SZ). Lack of detailed phenomenological assessments of perceptual disturbances in large psychiatric imaging datasets limits our ability to disentangle the underlying neural mechanisms of hallucinations. Our study investigates how changes in local functional communication dynamics may be associated with wide-ranging auditory disturbances in Sz.

**Methods:** Local functional connectivity was estimated using regional homogeneity (ReHo) analysis of resting fMRI data, which quantifies synchronization of fMRI activity of a voxel to its neighboring voxels. Resting fMRI data of 99 Sz patients was analyzed (mean age=36.2±13.3 y, sex=71/28 m/f); Auditory perceptual disturbance in the past week was estimated using the auditory perception state (APS) subscale score of the recently validated Auditory Perceptual Trait and State Scale (http://www.mdbrain.org/APTS.pdf). Voxelwise regression analysis of ReHo was performed including APS score as a regressor of interest. Significant results were thresholded using AFNI’s 3dClustSim with autocorrelation function option to yield corrected p<0.05, corresponding to cluster-size threshold of 49 voxels at voxelwise p=0.001.

**Results:** Higher APS scores were associated with reduced ReHo in clusters in left putamen, right putamen, left temporoparietal junction, and right hippocampus. In a follow-up analysis using these clusters as seeds in whole-brain resting-state functional connectivity analysis (rsFC) analysis, higher APS scores were significantly associated with reduced rsFC between the right putamen seed and clusters in the contralateral putamen and auditory cortex.

**Discussion:** Our findings are consistent with those of a prior study that reported abnormal ReHo in left and right putamen of an unmedicated first-episode Sz patients (Cui et al. 2016). However, in that small sample (n=32), striatal ReHo was elevated relative to controls, and AH severity was not significantly correlated with striatal ReHo measures. Our study investigated ReHo in a large sample of chronic, medicated patients (all except 4 were taking antipsychotic medication at time of study). While it is widely accepted that striatal signaling is disrupted in Sz, future work is needed to better understand how striatal signaling deficits may change over the course of illness and how this relates to particular symptoms such as hallucinations. Implications for development of novel therapies that account for these nuanced findings will be discussed.

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