

Incidence of Smoking Rates and Relapse During the COVID-19 Pandemic

Ms Pratyaksha Sinha* and Ms Mais Hammoud

Weill Cornell Medicine-Qatar, Doha, Qatar

*Presenting author.

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Aims. Along with the numerous structural and cultural changes in healthcare brought about by the COVID-19 pandemic has had an overwhelming psychosocial impact on marginalized communities. Those with substance use disorders (SUD) are a particularly vulnerable group as they are more susceptible to infections and now have less access to healthcare. Smoking cigarettes is known to increase risk of respiratory tract infections due to suppression of respiratory function and impairment of the immune system. It is important to study the smoking rates and relapses over the course of the pandemic to observe whether the increased risk of COVID infection in smokers and the psychosocial stress of the lockdown have affected the behavior.

Methods. We searched databases including PubMed, PsycArticles, and Cochrane Library using applicable keywords for Substance-Related Disorders, Smoking, and the COVID-19 pandemic lockdown. 69 articles from the results were reviewed, out of which 1 was a meta-analysis and 1 was a systematic review. Other reviews and papers were also consulted to consider case studies and smaller group analyses.

Results. The results of the analysis showed that COVID-19 lockdowns have been negatively affecting those who struggle with substance use disorders, especially that of tobacco use. Evidence suggests a surge of addictive behaviors (both new and relapse) including behavioral addiction over the two years. Recent studies have noted an increase of tobacco use during the pandemic. In some studies, smoking frequency numbers remained stable, and quit attempts decreased.

Conclusion. The psychosocial changes brought on by the pandemic have increased the incidence of smoking frequency and relapse in ex-smokers. This might be due to the increased financial, social, and physical stress, and due to the increased difficulty in accessing healthcare services due to the lockdown. Other stressors contributing to increased smoking could be the stress of contracting a fatal disease, possibility of loss of employment, prolonged confinement, and feeling of boredom. Smoking-related behaviors also increase the risk for contracting the infection due to frequent physical interactions to purchase cigarettes, hand-to-mouth contact when smoking, and increased use of communal smoking places. COVID-19 and addiction are the two pandemics which concurrently can cause a major public health threat. It is important to make the public aware of the increased COVID-19 infection risk attributed to smoking. Hospitals should also resume de-addiction services and provide easy access to advice, support, and pharmacotherapy to those in need.

Treatment of Attention Deficit Hyperactivity Disorder (ADHD) in Pregnant Women: A Systematic Review of Cohort Studies

Dr Indu Surendran^{1*}, Dr Kalpa Wijesinghe² and Dr Joe Johnson²

¹St Helens and Knowsley Teaching Hospitals NHS Trust, Prescot, United Kingdom and ²MerseyCare NHS Foundation Trust, Prescot, United Kingdom

*Presenting author.

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Aims. The aim of this systematic review is to identify and appraise pharmacological options available for management of ADHD in pregnant women and adverse effects of ADHD medications on pregnancy and foetus (malformations or long-term effects).

Methods. Systematic review of prospective or retrospective cohort studies, available on this topic till September 2021 after PubMed and MEDLINE search, carried out by 2 reviewers independently. The preliminary search was conducted in March 2021, though the reviewers carried out timely cross-referencing as required. All cohort studied except those with ambiguous methodology were included. The data were further extracted using Microsoft excel after Quality Assessment was completed using NewCastle Ottawa Scale. A narrative synthesis was undertaken as meta-analysis was not feasible owing to heterogeneity between studies included.

Results. Eighteen Cohort studies were included (N = 28227 pregnant women with ADHD) of which 16 were deemed as good quality. Multiple confounders were identified.

The review noted that use of stimulants/non-stimulants reduced symptoms and improved functionality in these expectant mothers. Findings from our review overall indicate low risk of developing malformations with ADHD medications, with only Methylphenidate (notably cardiac) and Modafinil showing slightly increased though statistically significant risk. We also noted slightly increased risk for reduced Apgar scores, abortions on maternal request, pre-eclampsia and preterm births. There was no conclusive association noted between neuro-developmental delay or future ADHD in baby/child.

Conclusion. A case-by-case approach needs to be adopted for every patient, looking at how ADHD affects daily functioning and balancing that against adverse pregnancy outcomes. Also, innovative practices like drug holidays, as required medications, drug free trial while planning pregnancy etc. will help practitioners streamline the treatment of this group of patients better. Issues like research being restricted to certain countries, small sample size, record-based analysis, issues in ascertaining adherence, confounding factors, ethical conundrums etc. were noted.

Self-Rating Recovery in Forensic Settings: Associations Between Patients Views of Their Own Recovery, and Measures of Violence Risk and Symptoms

Dr Caroline Synnott^{1*}, Dr Catherine Rock¹, Dr Hania Amin^{1,2}, Dr Eimear Ni Mhurichartaigh¹, Professor Harry G Kennedy^{1,2} and Dr Mary Davoren^{1,2}

¹National Forensic Mental Health Service, Central Mental Hospital, Dundrum, Dublin, Ireland and ²Trinity College, Dublin, Ireland

*Presenting author.

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Aims. The aim of this study was to ascertain the correlations between patients' views of their recovery and clinicians' views of patients recovery, symptoms and risk, in a cohort of patients in the National Forensic Service Dundrum (NFMHS).

Methods. A cross sectional study was performed of all inpatients in the NFMHS Dundrum. The self-rated Dundrum tool was offered to all 96 in-patients and completed by 64. Clinician rated measures of violence risk (HCR-20), programme completion (Dundrum-3), recovery (Dundrum-4), symptoms (PANSS) and functioning (GAF MIRECC) were rated. ANOVA and concordance ratings were calculated using SPSS

Results. A total of 64 patients agreed to participate, of whom 10 were female. The self-rated Dundrum-3 correlated with the staff rated Dundrum-3 (0.471, $p < 0.001$). The self-rated Dundrum-4

correlated with the staff rated Dundrum-4 (0.373, $p = 0.003$). The self-rated Dundrum-3 correlated with the HCR-20 total (0.0352, $p = 0.005$), HCR-C (0.3677, $p = 0.004$), and HCR-R (0.301, $p = 0.018$). The self-rated Dundrum-3 correlated significantly with GAF occupational (-0.273, $p = 0.48$), symptomatic (-0.299, $p = 0.03$). The self-rated Dundrum-4 correlated only with the GAF symptomatic (-0.333, $p = 0.05$). The self-rated Dundrum-3 correlated with PANSS positive (0.457, $p = 0.001$), PANSS negative (0.514, $p < 0.001$), PANSS general (0.395, $p = 0.004$) and PANSS total (0.352, $p = 0.005$). The self-rated Dundrum-4 correlated with PANSS positive (0.356, $p = 0.01$) and PANSS negative (0.413, $p = 0.002$).

Conclusion. There was good correlation between patient and clinician ratings of programme completion and recovery. Patient self-ratings of programme completion and recovery correlated with staff ratings of functioning and symptoms. The directions of agreement were correct

Structural and Functional Thalamic Changes in Progressive Supranuclear Palsy

Dr Sean YW Tan^{1*2}, Mr P Simon Jones², Dr David J Whiteside^{1,2}, Professor James Rowe^{1,2,3} and Dr Timothy Rittman^{1,2}

¹Cambridge University Hospitals NHS Trust, Addenbrooke's Hospital, Cambridge, United Kingdom; ²Department of Clinical Neurosciences, University of Cambridge, Cambridge, United Kingdom and ³MRC Cognition and Brain Sciences Unit, University of Cambridge, Cambridge, United Kingdom

*Presenting author.

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Aims. Studies of thalamic structure and function in Progressive Supranuclear Palsy (PSP) suggest it may play a role in key aspects of the clinical syndrome. This study examined thalamic changes across PSP phenotypes investigating (i) thalamic atrophy (ii) thalamic functional connectivity and (iii) the relationship between thalamic structural and functional connectivity changes with clinical severity.

Methods.

Participants

92 participants with PSP [63 PSP-Richardson's Syndrome (RS), 24 PSP-cortical, 5 PSP-subcortical] and 104 age-matched controls were recruited from the Cambridge Centre for Parkinson's Plus Disorders cohort. Clinical assessments and imaging were conducted within 1 year of diagnosis.

Structural Analysis

Thalamic volumes (TVs) were obtained using FreeSurfer. Bayesian multiple regression (brms, R) was used to model (i) mean TVs (ii) group differences in mean TVs (iii) relationships between Z-standardised clinical scores and TVs with age, gender, and total grey matter as covariates.

Functional Analysis

Voxel-wise seed-based functional connectivity of the thalamus used the Functional Magnetic Resonance Imaging Expert Analysis Tool (FEAT) in FMRIB's Software Library (FSL). Inter-group differences and relationships between clinical scores and functional connectivity for each group were assessed using a general linear model with age and gender as covariates.

Results.

Structural Analysis

TVs for all PSP subgroups were smaller than controls. No differences between PSP subgroups were detected. There was evidence for a relationship between TVs for the entire PSP group and Revised Addenbrooke's Cognitive Examination (ACER)

scores [$\beta = 0.28$, 95% credible interval (CI) = 0.04–0.53]. Subgroup analysis showed evidence for a relationship between ACER scores and TVs in PSP-RS [$\beta = 0.33$, 95% CI = 0.09–0.57] and PSP-cortical [$\beta = 0.46$, 95% CI = 0.12–0.83] phenotypes. A negative influence of TVs on total PSP rating scale scores was found for the PSP cohort a whole [$\beta = -0.51$, 95% CI = -1.00 – -0.02].

Functional Analysis

PSP patients as a group showed decreased thalamic functional connectivity in higher cortical regions. Subgroup analysis revealed decreased connectivity in those areas compared to controls but in distinct distributions and magnitude. Increased thalamic connectivity with the middle temporal gyrus correlated with ACER scores for PSP patients as a group and in the PSP-cortical subtype.

Conclusion. Thalamic volume loss is a prominent aspect of PSP and is associated with a wide network of changes in functional connectivity that may be distinct between PSP subtypes. Changes in thalamic structure and function predict clinical severity, particularly in PSP-RS and PSP-cortical subtypes.

Assessing the Impact of Pre-Existing Mental Health and Neurocognitive Disorders on the Mortality and Severity of COVID-19 in Those Aged Over 18 Years: A Systematic Review and Meta-Analysis

Dr Catrin Thomas^{1*}, Dr Laura Williams², Dr Asha Dhandapani³ and Dr Sarmishtha Bhattacharyya^{3,4}

¹Betsi Cadwaladr University Health Board, Ruthin, United Kingdom;

²Betsi Cadwaladr University Health Board, Rhyl, United Kingdom;

³Betsi Cadwaladr University Health Board, Wrexham, United Kingdom. and ⁴University of Chester, Chester, United Kingdom

*Presenting author.

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Aims. Since the coronavirus disease 2019 (COVID-19) pandemic began, evidence suggests that people with underlying mental health disorders have worse outcomes from COVID-19 infection. Our aim was to assess the impact of COVID-19 infection on people with pre-existing mental health or neurocognitive disorder including COVID-19 related mortality and severity.

Methods. We conducted systematic searches of PubMed, EMBASE, and Cochrane library for articles published between 1 December 2019 and 15 March 2021. The language was restricted to English. We included all case control, cohort and cross sectional studies that reported raw data on COVID-19 associated mortality and severity in participants aged 18 years or older with a pre-existing mental health or neurocognitive disorder compared to those without. Three independent reviewers extracted data according to the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) and the Meta-analysis of Observational Studies in Epidemiology (MOOSE) guidelines. Methodological quality and risk of bias were assessed using the 9-star Newcastle-Ottawa Scale. We calculated the odds ratio as the summary measure along with the corresponding 95% confidence intervals. The random effects model was used to calculate the overall pooled risk estimates. COVID-19 related mortality was the primary outcome measure. The secondary outcome measure was COVID-19 related severity, defined as intensive care unit admission or use of mechanical ventilation.

Results. Fifteen studies were included in the meta-analysis comprising of 8,021,164 participants. There was a statistically significant increased risk of mortality for participants with a pre-existing mental health or neurocognitive disorder compared to those