followed by individual (n = 12), mixed format (n = 14) and electronically (n = 2).

TPE programmes exhibited diversity in delivering agents and intervention formats, with a notable presence of multidisciplinary teams and various professionals. The interventions prioritized coping strategies and disease management techniques, though the extent varied based on the disorder. Examining the different skills imparted during the interventions, the focus predominantly leaned towards the teaching of coping strategies. These encompassed both cognitive and behavioural coping skills, including areas such as self-confidence (n = 37), stress management (n = 39), critical thinking (n = 26), problem-solving (n = 18), goal setting (n = 31), situational awareness (n = 36), and self-care (n = 36), with unspecified coping skills also noted (n = 32).

Effectiveness was heterogeneous across studies; some interventions showed significant benefits in areas such as symptom management, coping, and functional improvement, while others reported no significant outcomes.

Conclusion. The findings underscore the potential of TPE in psychiatric care, revealing its multifaceted nature and varied impact. TPE not only addresses deficits but also leverages patients' existing strengths and capabilities. Despite the reported benefits, a portion of the interventions lacked statistical significance, indicating the necessity for continuous refinement and evaluation.

Modelling Clozapine Levels to Identify Safe Titration Targets and a Method for Precise Dose Adjustment

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Aims. A precision medicine approach to clozapine dosing aims to personalise it in two ways: i) during titration, and ii) for succeeding dose adjustments. This requires valid models of dose/concentration relationships, but cross-sectional models suffer from population-level artefacts and individual problems due to poor adherence or stopping smoking. Longitudinal data sets from two mental health trusts allowed poor adherence and smoking cessation to be identified. We then modelled dose/concentration relationships to construct personalised targets for i) and ii).

Methods. Demographics and co-prescribed medication were recorded for 137 patients from Greater Manchester Mental Health (GMMH) Trust who had two or more successive plasma levels and doses from 2016–2018. 412 patients from Pennine Care Foundation Trust (PCFT) who had successive plasma levels and doses from 2009–2023 were also recorded. In each sample, adherent patients (88 from GMMH and 371 from PCFT) were identified after excluding: > two-fold variation between blood samples in clozapine/norclozapine ratios, > two-fold variation in dose/concentration ratios, a clozapine/norclozapine ratio > 3, or a dose/concentration ratio > two standard deviations from the sample mean. Those whose smoking status (smoker vs non-smoker) changed between samples were excluded.

To identify i) titration targets, we used raw data in first samples (checked with logistic regression) to identify dose thresholds which produced most levels above 0.35 µg/ml (therapeutic) and no levels greater than 1 µg/ml (toxic). To model ii) effective dose adjustment, we used the equation $Dt = Dc(Ct/Cc)$ to identify the most effective dose for the second samples. Dt was target dose, Dc current dose, Ct target level (0.45 µg/ml), and Cc current level.

Results. First sample dose/concentration ratio in adherent patients correlated r > 0.75 with second samples' dose/concentration. >84% of plasma levels were within 20% of the mean across both samples.

i. The GMMH dataset titration targets were 325 mg, 300 mg, 225 mg, and 175 mg daily for male smokers, female smokers, male non-smokers, and female non-smokers, respectively. In PCFT, data suggested corresponding targets of 375 mg, 325 mg, 225 mg and 175 mg. Targets avoided toxicity and gave therapeutic levels in > 50% of cases.

ii. Target dose, ascertained using the equation, and actual second dose were compared: in adherent cases, toxicity only occurred when actual doses were 1.5-fold greater than target dose, and above target all plasma levels exceeded 0.35 µg/ml in GMMH. PCFT data appeared similar.

Conclusion. Relatively safe and effective titration targets for smokers and non-smokers from both sexes were identified. A simple equation would improve precision and effectiveness of dose adjustment thereafter.

Benzodiazepine Use Disorder Observed and Diagnosed in a Tertiary Care Pediatric Specialty Clinic: A Descriptive Retrospective Chart Review

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Aims.
Objectives: In youth and young adults, it is common to encounter non-medical use of benzodiazepines, defined as use without a prescription or use for reasons other than that for which the medication is intended. Benzodiazepine use disorder remains understudied and overlooked, especially in youth and young adults. The primary objective of our study was to highlight the proportion of youth and young adults with aberrant use of benzodiazepines and diagnosed with benzodiazepine use disorder in a single centre. The secondary objective was to determine factors associated with aberrant benzodiazepine use and benzodiazepine use disorder in that sample.

Methods. This retrospective chart review screened for benzodiazepine use in 310 adolescent patients aged 12–19 seen for the first time in a concurrent disorders clinic, at a tertiary care clinic in Canada. Of those 310 patients, 167 were included in the final chart review.

Results. 97.6% of patients who used benzodiazepines demonstrated aberrant use, and 39.3% of patients received a diagnosis of benzodiazepine use disorder.

Conclusion. This review showed that a substantial percentage of youth and young adults in a concurrent disorders clinic in

Canada are presenting with aberrant benzodiazepine use and are being diagnosed with benzodiazepine use disorder. Despite this prevalence, there is little by way of literature to guide treatment of benzodiazepine use disorder in this population.

Management of Benzodiazepine Use in Youth and Young Adults: A Scoping Review

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Aims. Benzodiazepines are commonly used medications that have the potential for dependence and use disorder. Despite these harms, they are regularly prescribed and acquired from non-prescription sources. It has been established that benzodiazepine use is a widespread problem in youth and young adults. Little evidence exists to guide management of benzodiazepine use in this population. This scoping review aims to gather literature on the management of benzodiazepine use and identify the gaps in the literature to guide further research, particularly in youth and young adults.
Methods. Methodology followed the Joanna Briggs Institute (JBI) and Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) extension for Scoping Reviews guidelines. MEDLINE (Ovid), Embase, Cochrane, and Cumulated Index to Nursing and Allied Health Literature (CINAHL) were searched, together with a search of the grey literature. A survey of experts in the field of addiction medicine was completed. Broad inclusion criteria were used to capture any available literature. Data were compiled using Covidence software, and two independent reviewers screened titles, abstracts, and full texts against the eligibility criteria. Data were extracted using a modified JBI data charting table. Descriptive statistics and a simple thematic analysis were performed to summarize the data collected.
Results. Of the 835 papers retrieved, 104 papers published from December 1982 to March 2023 were included in the final review. Two of the papers included in this review pertained to youth and young adults. The rest of the papers were based on the adult population. Gradual dose reduction is the only method with evidence for efficacy in youth. Several therapies show efficacy in adults and could be future areas of research in youth, including benzodiazepine maintenance therapy, carbamazepine, gabapentin, pregabalin, trazodone, flumazenil slow infusion, and buprenorphine in various clinical contexts. Valproic acid, agomelatine, tricyclic antidepressants, paroxetine, buspirone, progesterone, cyamemazine, magnesium aspartate, clonidine, lithium, hydroxyzine, chlorpromazine, alpidem, captodiame, and ondansetron were deemed ineffective, unsafe in youth, or were not available for use in Canada. Topiramate, lamotrigine, oxcarbamazepine, phenobarbital, propranolol, baclofen, mirtazapine, and nicotinic acid had preliminary, low-quality evidence in adults, and would require further study.
Conclusion. Benzodiazapine use disorder in youth is dangerous and common, and the lack of pharmacotherapeutic options has been deemed significant by our research team. The results of this review are promising in that they provide some further guidance on the management of this condition.

Comparison of Temperament and Cognitive Function Between Basketball and Baseball Players

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Aims. The purpose of this study was investigating the differences in temperament, personality, and cognitive function among athletes and non-athletes, as well as differences within athlete groups participating in different-paced sports like baseball and basketball.
Methods. A total of 57 professional basketball players, 51 professional baseball players, and 44 non-athletes subjected to temperament and characteristics inventory assessments and computerized neurocognitive function test. One-way analysis of variance (ANOVA) was employed to analyze the average differences in demographic characteristics, temperament, personality traits, and cognitive functions among the three groups, followed by Bonferroni post hoc tests. Comparisons between starters and non-starters within the athlete groups were conducted using the Mann–Whitney U test.
Results. In the analysis of temperament, the basketball and baseball player groups exhibited higher reward dependence and persistence compared with the control group. Additionally, in the assessment of personality traits, both basketball and baseball player groups scored higher in self-directedness and cooperativeness compared with the control group, whereas self-transcendence scores were lower. In cognitive ability assessments, baseball and basketball players outperformed the control group in emotional perception tests. Both baseball and basketball players showed lower card movement counts compared with the control group.
Conclusion. This study compared the differences in temperament, personality, and cognitive abilities between professional basketball and baseball players and non-athletes. These results provide valuable insights into the temperament, personality, and cognitive abilities of professional athletes, contributing important information for athlete development and coaching goals in the future.

Longitudinal Trajectories of Plasma Polyunsaturated Fatty Acids and Associations With Psychosis-Spectrum Outcomes in Early Adulthood

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