treatments like antidepressants are effective but not universally successful, prompting interest in adjunctive therapies. Omega-3 fatty acids, particularly eicosapentaenoic acid (EPA) and docosahexaenoic acid (DHA), are thought to offer neuroprotective and anti-inflammatory benefits that may help manage MDD. This systematic review and meta-analysis assessed the efficacy of omega-3 supplementation in reducing depressive symptoms, improving remission rates, and enhancing overall treatment outcomes in adults with MDD.
Methods: We conducted a systematic search of PubMed, PsycINFO, Scopus, and Google Scholar to identify relevant studies published up to March 2024. We included randomized controlled trials (RCTs) and observational studies that investigated omega-3 supplementation in MDD. Studies were selected based on their focus on depressive symptom reduction, remission rates, or relapse prevention. Data were extracted by two independent reviewers, and statistical analysis was performed using random-effects models for meta-analysis.
Results: Twenty studies, including 15 RCTs and 5 observational studies with 2,300 participants, met inclusion criteria. Omega-3 supplementation significantly reduced depressive symptoms compared with placebo, with a pooled effect size of Hedge's g = −0.45 ($p<0.01$). The most pronounced effects were observed in individuals with moderate-to-severe depressive symptoms. Subgroup analysis revealed that EPA supplementation was more effective when combined with antidepressants. Omega-3 supplementation was generally well tolerated, with mild gastrointestinal side effects.
Conclusion: Omega-3 supplementation, particularly EPA and DHA, is effective in reducing depressive symptoms in adults with MDD. Its favourable safety profile makes it a promising adjunctive treatment, especially for patients who do not respond fully to antidepressants. Further research is needed to optimize dosage and identify patient characteristics that predict the best outcomes.

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Machine Learning in Schizophrenia: A Systematic Review and Meta-Analysis of Diagnostic and Predictive Models

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Aims: Schizophrenia is a psychiatric disorder characterized by diverse clinical presentations, posing challenges in early diagnosis and prognosis. Machine learning (ML) has emerged as a promising tool to enhance diagnostic accuracy, predict disease progression, and personalize treatment strategies. This systematic review and meta-analysis synthesized current evidence on the application of ML in schizophrenia diagnosis, prognosis, and treatment response prediction.
Methods: A search was conducted across databases including PubMed, Embase, Scopus, Web of Science, and IEEE Xplore, adhering to PRISMA guidelines. Studies employing ML algorithms for schizophrenia classification, risk prediction, or treatment response modelling were included. Extracted data encompassed ML model types, sample sizes, data modalities (e.g., neuroimaging, clinical, genetic), and performance metrics such as accuracy, sensitivity, specificity, and area under the curve (AUC). A meta-analysis was performed to estimate pooled diagnostic performance, with heterogeneity assessed using I^2 statistics and publication bias evaluated via funnel plots and Egger's test.
Results: A total of 31 studies involving task-based functional MRI (t-fMRI) data were included in the meta-analysis. The pooled sensitivity and specificity for ML-based schizophrenia classification were both 0.83 (95% CI: 0.78–0.88), indicating a high level of diagnostic accuracy. Notably, studies focusing on selective attention tasks demonstrated higher specificity (0.86) compared with those assessing working memory tasks (0.79). Significant heterogeneity (I^2 = 72%) was observed, attributable to variations in neuropsychological domains, participant demographics, and clinical features.
Conclusion: Machine learning exhibits substantial potential in improving schizophrenia diagnosis and outcome prediction, particularly when utilizing task-based neuroimaging data. However, challenges related to data heterogeneity, external validation, and clinical implementation persist. Future research should focus on standardizing ML methodologies, integrating multimodal data, and enhancing model interpretability to facilitate translation into clinical psychiatry.

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Pedagogical Practices That Enhance Medical Students' Capacity for Creative Thought: A Qualitative Study

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Aims: In the medical field, there is a growing emphasis on fostering creativity and innovation in medical students to prepare them for the unpredictable nature of patient care. This study aimed to explore the perspectives of both lecturers and medical students on the current teaching practices and their influence on the development of creative thinking skills.
Methods: The study was conducted as qualitative research at the Malaysian Faculty of Medicine and Health Sciences and included a purposeful sample of eight medical students and seven lecturers. Data were gathered through individual semi-structured interviews held via the Google Meet platform and analysed using a thematic analysis approach.
Results: The findings indicate that learner-centred approaches, such as problem-solving exercises and group discussions, seminars, debates, and dramas have a positive impact on enhancing their creative thinking abilities. The use of technology-assisted teaching methods, including e-learning and simulation labs, was also perceived as inspiring, however, limitations in technical infrastructure were noted. Challenging activities like assignments, games, competitions, and online tests encourage creative learning. Hands-on activities, such as bedside teaching and clinical skill learning, are also valuable in learning clinical skills in unique ways, but their effectiveness could be reduced by environmental and personal factors. Furthermore, practicing para-curriculum activities in a supportive and relaxed learning environment was identified as fostering a culture of original thought.