after discharge; Future work will focus on breaking down some of the barriers experienced to living well; Working on refining a physical health intervention.

Depression Prior to Dementia: Examining Its Role as a Risk Factor, Prodromal Marker, or Confounding Comorbidity: A Synthesis of Current Research

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Aims: The relationship between depression and dementia represents a complex clinical phenomenon that continues to challenge our understanding of neurodegenerative disease progression. This review synthesizes the most recent evidence examining whether depression serves as a risk factor, prodromal marker, or common confounding comorbidity in dementia development.
Methods: A comprehensive review of recent research studies analysing the psychiatric markers associated with dementia onset were reviewed to develop a clinical framework for understanding and analysing the degree to which these psychiatric phenotypes are representing either risk factors, prodromal psychiatric markers or simply overlapping psychiatric comorbidity.
Results: Recent longitudinal research has revealed that mental disorders, particularly depression, significantly increase dementia risk, with symptoms manifesting up to two decades before dementia diagnosis. This research demonstrated that depressive symptoms often emerge as early as 15 years before formal dementia diagnosis, suggesting its potential role as a prodromal marker. These findings align with recent meta-analytic evidence confirming depression as an independent risk factor for dementia development.

Research has identified specific inflammatory pathways linking depression and neurodegeneration, with elevated inflammatory markers serving as a potential biological bridge between these conditions. This neuroinflammatory process appears to be bidirectional, with depression potentially increasing inflammatory markers that may accelerate cognitive decline, while neurodegenerative processes can trigger inflammatory responses that exacerbate depressive symptoms. These biological markers suggest shared pathophysiological pathways between depression and neurodegenerative processes, with inflammation playing a central role in both conditions.
Conclusion: The synthesis of research findings has significant implications for understanding and developing appropriate clinical practice and preventive strategies. The identification of depression as a risk factor, confounding variable and potential prodromal marker, is generally supported by robust longitudinal evidence and biological mechanisms and emphasizes the need for early intervention and regular monitoring of cognitive function in individuals with late-life depression. The evidence suggests a complex multifactorial interplay where depression may serve as a risk factor, comorbidity and an early manifestation of neurodegenerative processes, highlighting the importance of comprehensive assessment and long-term monitoring of depressed elderly patients for cognitive decline.

Development and Evaluation of an AI-Powered MRCPsych CASC Simulator for Exam Preparation

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Aims: Preparation for the MRCPsych CASC exam can present unique challenges for psychiatry trainees, including limited access to structured practice, real-time feedback and standardized patient interactions. This project aimed to develop the MRCPsych CASC Simulator (MCS), a custom AI-powered tool designed to enhance exam preparation by providing interactive clinical simulations, structured feedback and objective performance assessment.
Methods: The simulator incorporated three core roles – Doctor (candidate), Patient (actor), and Examiner – to create realistic CASC exam stations. MCS was trained in the functional aspects of the CASC, the requirements of both doctor and patient roles, along with the psychiatric expertise, knowledge and resources required. To test performance, we utilized validated assessment tools, including the examiner's marking sheet for the CASC, Simulated Patient Rating Scale (SPRS), Objective Structured Clinical Examination (OSCE) the Communication Assessment Tool (CAT) to ensure objective and standardized evaluation. The simulator was tested in two roles, doctor and patient, by two different human assessors. The interactions were recorded and replayed for each assessment. Five stations were completed for each role from various psychiatric specialties. These scores were used to compare MCS with stock ChatGPT and to gain an overall understanding of MCS' performance. Additionally, assessors requested MCS for immediate feedback on their questioning style, response phrasing, diagnostic accuracy and communication skills to gauge MCS' effectiveness in providing feedback.
Results: The assessors found that MCS was competent in psychiatric assessments and patient simulation. MCS provided comprehensive learning support including mnemonics, diagnostic frameworks and summaries which facilitated differential diagnosis, clinical reasoning and memorisation. MCS provided real-time performance tracking, allowing potential candidates to refine their skills through iterative practice and targeted improvements.

MCS proved to be a significantly more effective tool for CASC practice than stock ChatGPT, scoring higher in both doctor and patient roles. MCS outperformed stock ChatGPT by an average 58% in doctor roles and 25% better in patient roles. Overall, the assessors found MCS to be a vital tool in CASC preparation.
Conclusion: MCS offers a novel and effective approach to psychiatric exam training by providing structured, objective and interactive practice opportunities. Its ability to provide tutoring, simulate realistic patient interactions and offer personalized feedback enhances clinical reasoning, communication skills and exam preparation.

Ketogenic Metabolic Therapies for Psychiatric and Neurodevelopmental Disorders

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