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PEER-REVIEW REPORT

Name of journal: *World Journal of Psychiatry*

Manuscript NO: 102131

Title: Brain-derived neurotrophic factor alterations and cognitive decline in schizophrenia: Implications for early intervention

Provenance and peer review: Unsolicited Manuscript; Externally peer reviewed

Peer-review model: Single blind

Reviewer's code: 08329911
Position: Peer Reviewer
Academic degree: Assistant Professor
Professional title: Doctor
Reviewer's Country/Territory: China
Author's Country/Territory: South Korea

Manuscript submission date: 2024-10-09
Reviewer chosen by: Jia-Lin Zhang
Reviewer accepted review: 2024-10-20 08:09
Reviewer performed review: 2024-10-21 09:53
Review time: 1 Day and 1 Hour

Scientific quality	[ ] Grade A: Excellent [Y] Grade B: Very good [ ] Grade C: Good [ ] Grade D: Fair [ ] Grade E: Do not publish
Novelty of this manuscript	[ ] Grade A: Excellent [Y] Grade B: Good [ ] Grade C: Fair [ ] Grade D: No novelty
Creativity or innovation of this manuscript	[ ] Grade A: Excellent [Y] Grade B: Good [ ] Grade C: Fair [ ] Grade D: No creativity or innovation

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Scientific significance of the conclusion in this manuscript	[Y] Grade A: Excellent [ ] Grade B: Good [ ] Grade C: Fair [ ] Grade D: No scientific significance
Language quality	[Y] Grade A: Priority publishing [ ] Grade B: Minor language polishing [ ] Grade C: A great deal of language polishing [ ] Grade D: Rejection
Conclusion	[ ] Accept (High priority) [Y] Accept (General priority) [ ] Minor revision [ ] Major revision [ ] Rejection
Re-review	[Y] Yes [ ] No
Peer-reviewer statements	Peer-Review: [Y] Anonymous [ ] Onymous
	Conflicts-of-Interest: [ ] Yes [Y] No

SPECIFIC COMMENTS TO AUTHORS

The author made a comment on "Interaction between serum inflammatory cytokines and brain-derived neurotrophic factor in cognitive function among first-episode schizophrenia patients" published on World J Psychiatry, 2024. The study advances our understanding of cognitive impairment in first-episode schizophrenia by highlighting the roles of inflammatory cytokines and BDNF. Schizophrenia is a syndrome that can include a variety of symptoms, especially positive symptoms (hallucinations, delusions), negative symptoms (avolition, anhedonia, reduced social engagement), and disorganized thoughts and behaviors. accumulating evidence has shown that the core pathophysiology of schizophrenia might involve dysfunction in dopaminergic, glutamatergic, serotonergic, and gamma-aminobutyric acid (GABA) signaling, which may lead to aberrant functioning of interneurons that manifest as cognitive, behavioral, and social dysfunction through altered functioning of a broad range of macro- and microcircuits. BDNF belongs to neurotrophins, a family of proteins that support the function of the central nervous system. This author explores the study by Cui et al. assessing the interplay between inflammatory cytokines and BDNF levels in

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first-episode schizophrenia patients, reviews the findings regarding alterations in BDNF levels in patients experiencing their first episode of schizophrenia, highlighting the clinical implications and exploring potential interventions, revealing that higher levels of IL-6 and TNF-α correlated with reduced BDNF levels and poorer cognitive performance, highlights the importance of personalized treatment approaches that integrate pharmacological and non-pharmacological strategies, along with continuous monitoring of cognitive function and neuroinflammatory markers to optimize patient outcomes. This research presents new opportunities for targeted interventions that could improve cognitive function and treatment outcomes. Combining biomarker-guided therapies with anti-inflammatory and BDNF-enhancing treatments offers a personalized approach to managing cognitive deficits. Long-term care in schizophrenia requires a comprehensive approach, that integrates both pharmacological and non-pharmacological treatments tailored to the individual's evolving needs. Continuous monitoring of neuroinflammatory and cognitive markers, along with personalized treatment plans, optimizes interventions, enhancing the likelihood of sustained recovery, treatment satisfaction, and improved quality of life. Limitation: BDNF as one of the most distributed and extensively studied neurotrophins in the mammalian brain, the importance between neuroinflammation has been emphasized, therefore, the author highlights a fact that everyone knows.