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Structural Modeling of the Relationship Between Neuropsychological Functioning and Quality of Life with the Mediating Role of Anxiety Sensitivity in Patients with Multiple Sclerosis

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1. Round 1

1.1. Reviewer 1

Reviewer:

The introduction effectively discusses the impact of MS on quality of life, but it lacks a strong theoretical grounding. It would be beneficial to explicitly reference theoretical models that link neuropsychological functioning to quality of life (e.g., cognitive reserve theory or stress-vulnerability models).

The study uses the Anxiety Sensitivity Index-Revised (ASI-R) but does not explain whether factor structure validation was performed in this population. Given that ASI-R factor structures can vary across cultures, it would be useful to confirm measurement invariance.

The Kolmogorov-Smirnov test is cited to check normality, but it is noted that the data were not normally distributed. It is unclear how this non-normality was handled in structural equation modeling (SEM). Please clarify whether bootstrapping or robust estimation techniques were used.

The fit indices for the SEM model are well reported, but justification for acceptable cut-off values is missing. The authors should state whether they followed Hu & Bentler (1999) recommendations for RMSEA, CFI, and TLI.

The discussion attributes quality of life changes to neuropsychological functioning and anxiety sensitivity, but alternative explanations (e.g., social support, financial status) are not considered. Please acknowledge other potential confounders.

Response: Revised and uploaded the manuscript.

1.2. Reviewer 2

Reviewer:

The literature review includes relevant studies but appears to underrepresent recent findings from 2022–2025. For instance, the review cites Han (2021) as a key reference on MS and quality of life, but newer studies could provide more updated insights.

While anxiety sensitivity is positioned as a mediator, the rationale for its selection is not well established. It would strengthen the argument to compare anxiety sensitivity with other potential mediators (e.g., depression, resilience) and justify why it was chosen.

The article reports reliability indices for the Neuropsychological Functioning Questionnaire, but does not explicitly report validity indices such as construct validity or confirmatory factor analysis (CFA) results. If CFA was conducted, please include fit indices.

The regression table presents coefficients, but the discussion does not fully interpret their magnitude. For example, "Neuropsychological Functioning → Quality of Life ($\beta = 0.22$, $p < .05$)" indicates a small effect. Discuss whether this effect size is clinically meaningful.

The discussion states, "These findings align with previous research (Kos et al., 2017; Jabbari Amiri et al., 2015), confirming a significant relationship between neuropsychological functioning and quality of life." However, no direct comparison of effect sizes with past studies is provided. A more in-depth comparison would strengthen the discussion.

2. Revised

Editor’s decision after revisions: Accepted.

Editor in Chief’s decision: Accepted.

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