



LETTER TO THE EDITORS

Defining the undefined: methodological issues in the genetic study of mediumship

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We read with great interest the recent study “Candidate genes related to spiritual mediumship: a whole-exome sequencing analysis of highly gifted mediums,” by Gattaz et al.,¹ which explores a novel and intriguing topic. However, we have identified critical methodological issues that challenge the validity and reproducibility of its conclusions. In particular, the study’s definition of mediumship is highly arbitrary and subjective, undermining the reliability of any subsequent findings.

A fundamental limitation of this study is its definition of “highly gifted mediums.” The authors state that individuals were identified based on recognition by their peers within spiritual communities and on criteria such as years of practice and voluntary engagement. However, this definition lacks any objective or standardized framework, making it highly susceptible to self-attribution bias² and subjective validation. Moreover, the criterion of being “recognized by their peers” presents a paradox. How can someone be considered a peer without being subject to the same scrutiny applied to the studied mediums? This circular reasoning further weakens the study’s foundation.

In scientific research, defining a phenomenon is crucial for ensuring reproducibility and valid comparisons across studies. Mediumship is an inherently complex construct, with varying definitions across religious, anthropological, psychological, and neuroscientific domains. By relying solely on recognition within a spiritual community, the study fails to establish an operational definition that is independent of subjective belief systems. This introduces severe selection bias and significantly limits the generalizability of the results.

Additionally, the study does not consider the influence of social and cognitive factors that may contribute to an individual being labeled as a medium. Psychological research indicates that dissociative tendencies, suggestibility, and cultural reinforcement play key roles in the emergence of mediumistic experiences.³ Without a robust and objective definition, it is impossible to determine whether the reported genetic findings are genuinely associated with a distinct neurobiological trait.

Another major concern is the use of a questionnaire developed by the authors’ research team to assess

mediumistic abilities. A Google search for the DOI of the reference yields no results. The cited reference is a doctoral thesis defended at the University of São Paulo, suggesting that it has not undergone prior independent validation. The absence of psychometric validation raises significant doubts about the reliability and validity of the data collected.

While the genetic analysis itself seems to follow standard sequencing procedures, the study’s interpretation of the findings is problematic, as the identification of genetic variants absent in the control group (first-degree relatives) does not necessarily imply a causal relationship with mediumistic experiences. Besides, the study lacks functional assays or neurobiological evidence linking these genetic variants to altered sensory perception or cognitive processing and draws speculative conclusions regarding the mechanisms by which these genes would be related to mediumship.

Given the above concerns, we believe that the study’s conclusions regarding a genetic basis for mediumship are very premature. The lack of a standardized and objective definition of mediumship, the reliance on an unvalidated assessment tool, and the interpretation of genetic data without supporting functional evidence contribute to methodological limitations that warrant further clarification. Future research should prioritize rigorous operational definitions, validated psychometric instruments, and functional analyses to establish any potential biological underpinnings of mediumistic experiences.

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Disclosure

The authors declare no conflicts of interest.

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