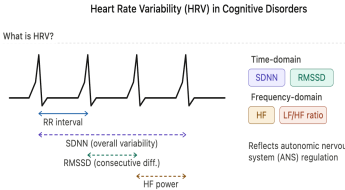
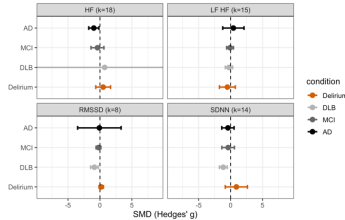


# Heart Rate Variability Differentiates Delirium from Neurocognitive Disorders: A Meta-Analysis

Chae eun Kim<sup>1</sup>, BS, MPH©, Wenhui Vivian Zhang<sup>2</sup>, PhD, MS, Assistant Research Professor

<sup>1</sup> Epidemiology, Emory University, Atlanta, GA, USA, <sup>2</sup> AI Humanity, Nell Hodgson Woodruff School of Nursing, Emory University, Atlanta, GA, USA.

HF power was the most informative HRV measure for distinguishing delirium from AD and MCI, suggesting that HRV may help differentiate acute from chronic cognitive dysfunction.

| BACKGROUND                                                                                                                                                                                                                                                                                                                                                         | METHODS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | RESULTS                                                                                                                                                                                                                                                                                                                                                                                                                                                 | CONCLUSIONS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | LIMITATION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
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| <p>Autonomic dysfunction is common in delirium and neurocognitive disorders, but whether HRV can distinguish between them remains unclear.</p> <p><b>Aim:</b> To compare HRV patterns across delirium, neurocognitive disorders, and healthy controls using meta-analysis.</p>  | <ul style="list-style-type: none"><li>Data extracted based on two previously published <b>meta-analyses</b>; rapid analysis approach with systematic search.</li><li>Standardized mean differences (SMD) estimated using <b>Hedges' g</b> with random-effects models.</li><li>Heterogeneity assessed with <math>I^2</math> statistics; subgroup analyses compared HRV differences across conditions.</li></ul> <p><b>ACKNOWLEDGEMENT</b></p> <p>•Funding: NIH/NIA Emory Goizueta Alzheimer's Disease Research Center Research Education Component Trainee Program Grant#P30AG066511</p> |  <ul style="list-style-type: none"><li>HF showed the most consistent differences, with lower values in AD and MCI compared to delirium.</li><li>DLB showed similar HF patterns to delirium, with wide uncertainty.</li><li>Other indices (SDNN, RMSSD, LF/HF) showed inconsistent results.</li><li>Delirium showed high heterogeneity across HRV measures.</li></ul> | <div><div>HF POWER – AD<br/><b>-1.13</b><br/>SMD (Hedges' g)<br/>95% CI: -1.58, -0.28</div><div>HF POWER – MCI<br/><b>-0.27</b><br/>SMD (Hedges' g)<br/>95% CI: -0.75, 0.20</div><div>HF POWER – DELIRIUM<br/><b>+0.50</b><br/>SMD (Hedges' g)<br/>95% CI: -0.68, 1.68</div></div> <ul style="list-style-type: none"><li>HF is the most informative HRV marker for distinguishing delirium from neurocognitive disorders.</li><li>HRV has potential as a clinically useful biomarker for differentiating acute vs chronic cognitive dysfunction and supporting earlier detection of delirium.</li></ul> <p><b>REFERENCES</b></p> <ul style="list-style-type: none"><li>• Patel KA et al. J Clin Neurosci, 2024</li><li>• Cheng YC et al. Aust N Z J Psychiatry, 2020</li></ul> | <ul style="list-style-type: none"><li>Small sample size in some groups</li><li>High heterogeneity</li><li>Literature search was not updated beyond prior meta-analyses</li><li>Future directions: updating the literature search, conducting prospective studies, and ongoing secondary analyses</li></ul> <p><b>CONTACT</b></p> <div><div><p><b>Chae eun Kim, MPH</b><br/>Candidate<br/>Emory University Rollins<br/>School of Public Health<br/>Email:<br/><a href="mailto:ckim726@emory.edu">ckim726@emory.edu</a></p></div></div> |