Movement Disorders
CLINICAL PRACTICE

REVIEW

Lewy Body Dementia Research in Latin America: A Scoping Review

Carlos Cano-Gutiérrez, MD,[1,2,*] Salomón Salazar-LondoñoMD,[2] Felipe Botero-Rodriguez, MD,[1,3,4] Salomón Páez-GarcíaMD,[2] Salomón Giraldo, MD,[2] José Manuel Santacruz-Escudero, MD, PhD,[1,2,5] Dag Aarsland, MD, PhD,[4,6] Miguel Germán Borda, MD, PhD,[4,7] on behalf of COL-DLB,

Abstract: Background: Dementia research in Latin America (LA) has primarily focused on Alzheimer's Disease and Frontotemporal Dementia, while Lewy body dementia (LBD) has been largely forgotten.
Objective: We aimed to review the available evidence on LBD in LA, offering a comprehensive perspective for understanding the lack of reports and the unique challenges and characteristics of this region.
Methods: We carried out a scoping review in databases: PubMed, EMBASE, LILACS, and Web of Science. Original studies that included participants with LBD were analyzed.
Results: Of the 1388 studies identified, 70 met the inclusion criteria for this review. Among them, 63 were cross-sectional studies, three were cohort studies, two followed a case–control methodology, and only two were non-randomized clinical trials. These studies primarily examined clinical manifestations, risk factors, neuropsychiatric and non-motor symptoms, as well as cognitive impairment and its assessment in LBD within LA. Regarding geographical distribution, 52 studies were conducted in Brazil, seven in Argentina, the rest in Peru, Mexico, Colombia, Cuba, and Chile.
Conclusions: LBD research in LA is underrepresented, with most studies being cross-sectional, few utilizing a longitudinal design, and only two clinical trials, both of which lack rigorous methodology. Challenges include weak study designs, high heterogeneity, limited trials, and unclear differentiation within the LBD spectrum. Addressing these gaps requires increasing awareness, strengthening research capacity, securing funding, and fostering international collaboration.

Understanding dementia in underrepresented populations can improve the quality of life of those living with the disease and their care partners by reducing health and care inequities.[1] In this sense, specifically for Latin America (LA), initiatives such as the Multi-Partner Consortium to Expand Dementia Research in Latin America (ReDLat) have emerged targeting mainly Alzheimer's Disease (AD) and Frontotemporal Dementia (FTD).[2] However, other etiologies, such as Lewy Body dementia (LBD), have remained largely neglected. Nevertheless, according to the position paper by D'Antonio et al,[3] there are some recent initiatives in Brazil (The Brazilian Biobank for Aging Studies at University of São Paolo and The Federal University of São Paulo), Colombia (Colombian Consortium for the Study of Dementia with Lewy Bodies COL-DLB), and Peru (the Peruvian Institute of Neurosciences) related to this disease.

LBD is the second most common cause of neurodegenerative cognitive disorders worldwide,[4] accounting for 4.2% of all diagnosed dementia in primary care, and 7.5% in secondary care.[5] People with LBD experience worse prognosis, lower quality of life, and higher mortality rates, compared to those with AD or other dementias. LBD represents a substantial burden for caregivers and the healthcare system.[6] Moreover, disease-modifying

[1]*Intellectus Memory and Cognition Center, Hospital Universitario San Ignacio, Bogotá, Colombia;* [2]*Semillero de Neurociencias y Envejecimiento, Ageing Institute, Medical School, Pontificia Universidad Javeriana, Bogotá, Colombia;* [3]*SynaptIA – Inteligencia artificial para la investigación en salud mental, Bogotá, Colombia;* [4]*Centre for Age-Related Medicine (SESAM), Stavanger University Hospital, Stavanger, Norway;* [5]*Departamento de Psiquiatría y Salud Mental, Pontificia Universidad Javeriana, Bogotá, Colombia;* [6]*Centre for Healthy Brain Ageing, Institute of Psychiatry, Psychology, and Neuroscience, King's College London, London, UK;* [7]*Department of Neurology, Clínica Universidad de Navarra, Pamplona, Spain*

***Correspondence to:** Dr. Carlos Cano-Gutiérrez, Pontificia Universidad Javeriana, Bogotá, Carrera 7#40-62, Colombia; E-mail: ccano@javeriana.edu.co
Keywords: Lewy body disease, synucleinopathies, dementia, Latin America, review.
Members of the COL-DLB group are listed in the Appendix.
This is an open access article under the terms of the Creative Commons Attribution License, which permits use, distribution and reproduction in any medium, provided the original work is properly cited.
Received 31 December 2024; revised 11 March 2025; accepted 12 March 2025.
Published online 00 Month 2025 in Wiley Online Library (wileyonlinelibrary.com). DOI: 10.1002/mdc3.70059

© 2025 The Author(s). *Movement Disorders Clinical Practice* published by Wiley Periodicals LLC on behalf of International Parkinson and Movement Disorder Society.

therapies are still not available, and few clinical trials are on course.[7] However, recent major developments include the opportunity to accurately diagnose and classify the underlying pathology using seeding amplification assays, which has led to a new proposal for the biological definition of neuronal synuclein disorder, incorporating both Parkinson's disease dementia (PDD) and dementia with Lewy Bodies (DLB).[8] This is expected to lead to renewed interest in these disorders including increased trial activity. Moreover, there is robust evidence demonstrating that the DLB diagnosis is frequently missed, and with every new consensus report, prevalence increases due to changes in sensitivity: 2005 criteria compared to 1996 criteria increased prevalence in the population and clinical case studies in more than 4%.[5]

Knowledge and research on LBD in LA are limited, likely due to a lack of available data, the complexity of the disease, underdiagnosis, and the resulting challenges in identifying and recruiting patients.[9] Therefore, including underrepresented populations in research, and aiming for global harmonization represents a priority for LBD research. Specific consortiums oriented to this are ongoing, and a good example of this is the E-DLB consortium.[10] Also, since unique patterns of aging may exist in LA,[11] there can be specific characteristics for LBD related to prevalence, clinical manifestations, or other aspects related to the disease.

We aimed to review the available evidence on LBD in LA, offering a view of the available reports and the unique challenges in the region. By examining study design, demographics, and methodology, we aim to identify key research gaps and support future studies to improve understanding and diagnosis of LBD.

Methods

We carried out a scoping review according to the PRISMA Extension for Scoping Reviews (PRISMA-ScR).[12]

Selection Criteria

We included studies that explicitly inform the inclusion of people living with LBD in their analysis. The included studies were peer-reviewed and consisted of cross-sectional, longitudinal, or clinical trials. Studies published in English, Spanish, or Portuguese were considered.[13]

We excluded studies published uniquely in abstract format, mainly conference related, and multicenter studies with a sample from LA were excluded. Moreover, if patients with LBD were included in a broader category named "other dementias" or similar, that did not provide any information, were excluded. Case reports or series were also excluded.

Search and Selection of Articles

PubMed platform, EMBASE (Elsevier), LILACS and Web of Science were the databases considered. We employed both controlled vocabulary and free-text terms according to each database. The search strategy for these databases was related to LBD and LA as shown in Supplementary material 1.

The screening was performed with the Rayyan software, and independently conducted by two reviewers (SSL, SG), and a third reviewer was available for disagreements. We did not include any filters, and the last search was done in March 2024.

Studies' findings were synthetized qualitatively with a descriptive approach, using a narrative description of the findings supported by a synthesis table.

Results

A total of 1388 studies were identified, with 119 articles selected for full-text evaluation. The primary reasons for exclusion were duplicate publications, lack of full-text availability, and discrepancies in inclusion criteria. See Figure 1.

Overall, 2220 patients were included: 763 with LBD, 1220 with PDD, and 237 classified as LBD without further specification. The average number of participants per study was 28.3 (23.8 for DLB, 29.0 for PDD, and 47.4 for LBD). Sixty-three papers had a cross-sectional design,[14–76] three were cohort studies,[77–79] two had a case–control methodology,[80,81] and only two clinical trials were included.[82,83] Also, five papers included a neuropathological analysis in their methods.[36,46,47,49,68]

Regarding diagnostic criteria, among the articles including individuals with PDD ($n = 44$), 25 used the Movement Disorder Society (MDS) criteria, 12 applied the Diagnostic and Statistical Manual of Mental Disorders (DSM), four relied on a cognitive test, one used the Clinical Dementia Rating (CDR), and one did not specify the criteria used.

In terms of neuropathology, one study reported using a combination of Braak stages and CDR. Among the articles including patients with LBD ($n = 36$), nine applied the 3rd report of the

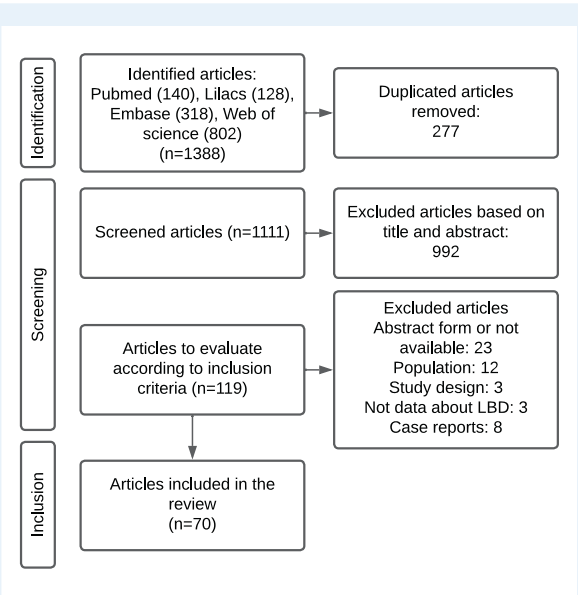


Figure 1. Prisma diagram.

23301619, 0, Downloaded from https://movementdisorders.onlinelibrary.wiley.com/doi/10.1002/mdc3.70059 by Norwegian Institute Of Public Healt Invoice Receipt DFO, Wiley Online Library on [21/04/2025]. See the Terms and Conditions (https://onlinelibrary.wiley.com/terms-and-conditions) on Wiley Online Library for rules of use; OA articles are governed by the applicable Creative Commons License

Lewy Body Consortium, five used the 4th report, and six referenced the 1st report. Additionally, four studies used the DSM, one applied the Operational Criteria for Senile Dementia of the Lewy Body Type, and seven did not specify the diagnostic criteria used. For neuropathological studies, four studies reported using a combination of Braak stages and CDR.

According to the publications over time, the data indicates a fluctuating trend in the number of papers, with an overall increase observed from the early 2000s to the mid-2010s. The peak in publications occurred in 2017, after which there was a slight decline, but the number of publications has remained relatively stable in recent years (Fig. 2). Brazil is the leading country with 52 articles, followed by Argentina with seven articles, Peru and Mexico with three articles each, Colombia and Cuba had two articles each, and Chile with one article. This distribution highlights Brazil's dominant role in LBD research within the region, while other countries have a more limited output (Fig. 3).

Out of the studies reviewed, 36 articles had a focus on patients with LBD (1112 patients, with 470 LBD and 642 PDD). The mean sample size per study was 30.9, for DLB it was 36.2, and for PDD 24.7. These studies addressed various aspects of the condition, including risk factors, neuropsychiatric symptoms (NPS), non-motor symptoms, cognitive impairment screening tools, biomarkers, and treatment (Table 1). The information related to articles that consider Lewy body disease as a subsample is in the supplementary material 2.

Risk Factors

Eight studies focused on risk factors. They documented history of adult attention deficit and hyperactivity disorder as a risk factor for LBD.[80] In patients with Parkinson's disease (PD), the severity of the disease and the educational level of the patient were associated with PDD.[19,32] However, it is not clear if the initial cognitive profile can predict the cognitive prognosis of patients.[29] Age appears to be related to cognitive decline in patients with PD,[34] mainly affecting episodic memory, but in general, a large spectrum of neuropsychological performance was described.[31,33] Motor disability measured using the Hoehn and Yahr scale was associated with PDD.[35]

Neuropsychiatric Symptoms

Ten studies focused on neuropsychiatric symptoms, and the Neuropsychiatric Inventory (NPI) was the most common tool. In patients with LBD from Brazil, based on a survival analysis,

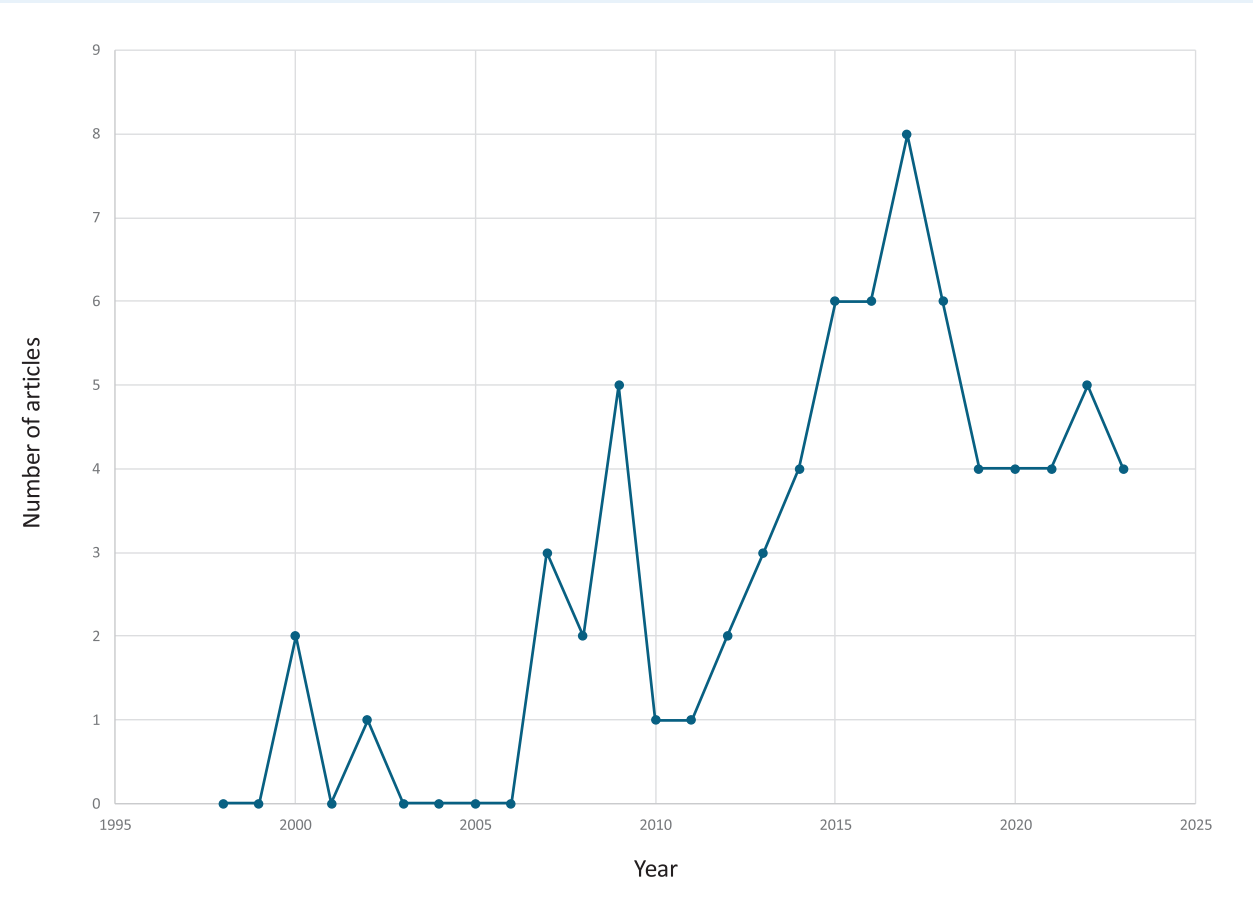


Figure 2. Number of published articles per year.

23301619, 0, Downloaded from https://movementdisorders.onlinelibrary.wiley.com/doi/10.1002/mdc3.70059 by Norwegian Institute Of Public Healt Invoice Receipt DFO, Wiley Online Library on [21/04/2025]. See the Terms and Conditions (https://onlinelibrary.wiley.com/terms-and-conditions) on Wiley Online Library for rules of use; OA articles are governed by the applicable Creative Commons License

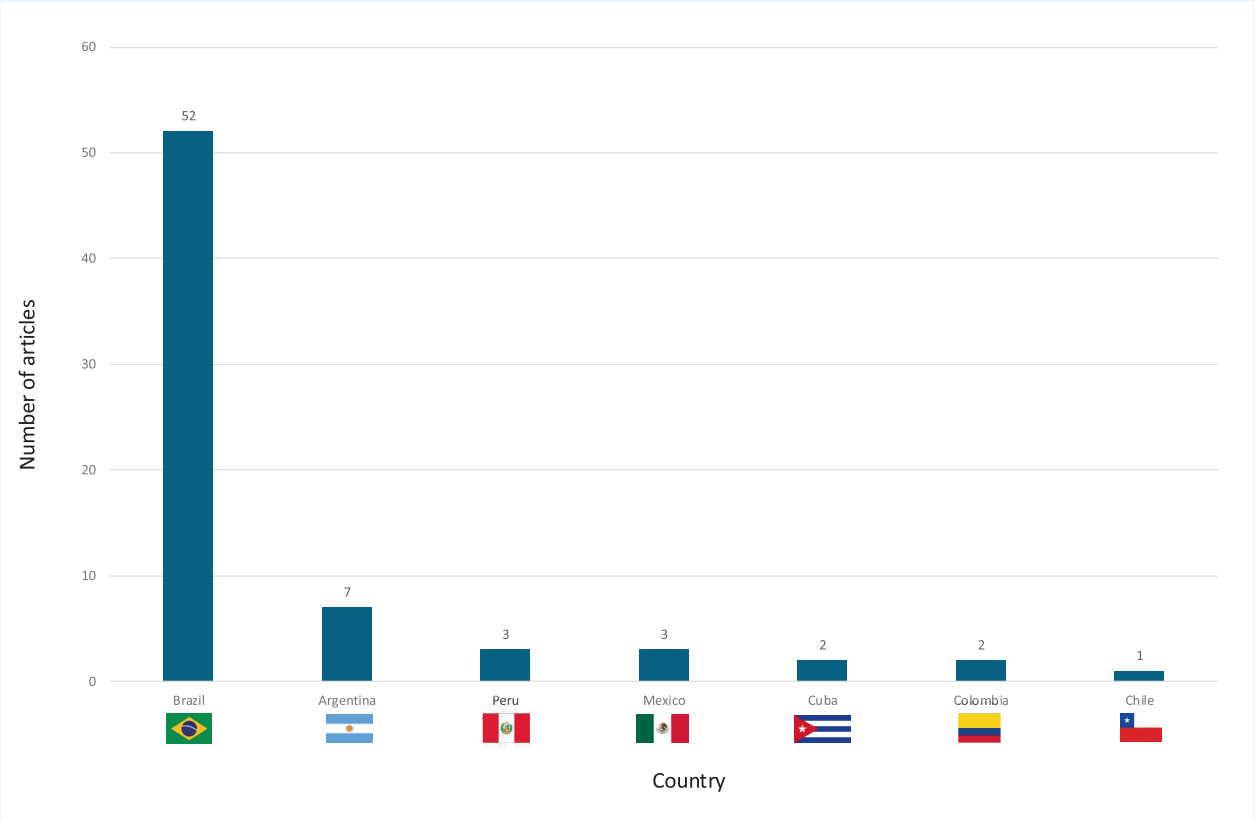


Figure 3. Number of published articles per country.

the duration of dementia was shorter specifically for severely impaired patients who had depression, based on the NPI, and were on antidepressants.[14] In patients with DLB, neuropsychiatric symptoms appear to be more closely associated with impairments in visual organization than with linguistic features.[20] It was also described that cases with dual pathology (DLB + AD) from Brazil had the highest risk of hallucinations, agitation, apathy, and total symptoms based on the NPI, and confirmed with histological post-mortem studies,[36] and patients with DLB may have a higher index of anosognosia compared to patients with AD,[38] as well as a larger behavioral burden with hallucinations based on the NPI being inversely associated with Aβ42/Aβ38 and phospho-Tau Thr181.[21] Related to social cognition, the theory of mind is more impaired in patients with PDD compared to those with a behavioral variant of FTD.[42] Moreover, hallucinations, apathy, dysphoria, anxiety, and aberrant motor behavior based on the NPI were the most significant to differentiate from AD.[41]

Other Non-motor Symptoms

Three studies examined non-motor symptoms, specifically noting their higher prevalence in patients with DLB compared to those with PDD.[14] For the last group, a correlation between female sex and olfactory changes has been described.[15] Furthermore, the wake time after sleep onset and the number of state changes during sleep were associated with the global cognitive performance of patients with PDD.[23]

Diagnosis: Biomarkers and Screening Tools

Five studies included data on biomarkers (4.2%). Three studies included data on cerebrospinal fluid (CSF) biomarkers,[21,45,76] while another biomarker study had data on blood-based ones.[40] The last study included data related to electroencephalogram.[43] Research indicated that CSF phospho-tau Thr181 values in DLB were similar to those in AD, but not Aβ42, as patients with AD had lower values. Moreover, it was found that ratios performed better as diagnostic markers compared to cerebrospinal fluid amyloid-β, tau, phospho-tau Thr181, ubiquitin, α-synuclein.[76] Also, plasma butyrylcholinesterase activity (whose increased activity is associated with cognitive impairment) was evaluated as a possible biomarker for differential diagnosis between AD and LBD, finding a lower activity in the last.[40] It was also reported that homovalinic acid and vascular endothelial growth factor were reduced in LBD patients.[45] For electroencephalogram, delta and theta powers, beta frontal-occipital inter-hemispheric coherence, and alpha and beta frontal inter-hemispheric coherence were highest in PDD patients.[43] Also, we did not find any

23301619, 0, Downloaded from https://movementdisorders.onlinelibrary.wiley.com/doi/10.1002/mdc3.70059 by Norwegian Institute Of Public Healt Invoice Receipt DFO, Wiley Online Library on [21/04/2025]. See the Terms and Conditions (https://onlinelibrary.wiley.com/terms-and-conditions) on Wiley Online Library for rules of use; OA articles are governed by the applicable Creative Commons License

TABLE 1 *Articles that were oriented to the study of patients with LBD*

First author (year)	Country	Language	Study design	Number of patients with LBD	LBD diagnostic criteria	Category
de Oliveira, 2020[14]	Brazil	English	Cross-sectional	DLB: 37 - PDD: 14	MDS criteria and Fourth consensus of DLB consortium	Neuropsychiatric symptoms, non motor symptoms
Camargo, 2018[15]	Brazil	English	Cross-sectional	PDD: 34	MDS criteria	Non motor symptoms
Garcia Basalo, 2017[16]	Argentina	English	Cross-sectional	DLB: 75	Third consensus of DLB consortium	Cognitive impairment screening tools
Rocha, 2014[17]	Brazil	English	Cross-sectional	PDD: 37	MDS criteria	Cognitive impairment screening tools
Golimstok, 2011[80]	Argentina	English	Case control	DLB: 109	First consensus of DLB consortium	Risk factors
Sobreira, 2015[18]	Brazil	English	Cross-sectional	PDD: 17	MDS criteria	Cognitive impairment screening tools
Custodio, 2008[82]	Peru	Spanish	Open essay	PDD: 21 - DLB: 12	DSM IV criteria, First consensus of DLB consortium	Treatment
Pérez, 2000[19]	Cuba	Spanish	Cross-sectional	PDD: 19	DSM IV criteria	Risk factors
Machado, 2020[20]	Brazil	English	Cross-sectional	PDD: 20 - DLB: 22	MDS criteria	Neuropsychiatric symptoms
De Oliveira, 2023[76]	Brazil	English	Cross-sectional	DLB: 27	Fourth consensus of DLB consortium	Biomarkers
Clavijo-Moran, 2022[22]	Colombia	English	Cross-sectional	NA	MoCA score < 18	Cognitive impairment screening tools
Sobreira, 2019[23]	Brazil	English	Cross-sectional	PDD: 11	MDS criteria	Non motor symptoms
Sousa, 2023[24]	Brazil	English	Cross-sectional	PDD: 22	MDS criteria	Cognitive impairment screening tools
Camargo, 2019[83]	Brazil	English	Non randomized clinical trial	PDD: 12	MDS criteria	Treatment
Camargo, 2016[26]	Brazil	English	Cross-sectional	PDD: 39	MDS criteria	Neuropsychiatric symptoms
Reyes, 2009[26]	Argentina	English	Cross-sectional	PDD: 13	MDS criteria	Cognitive impairment screening tools
Almeida, 2019[27]	Brazil	English	Cross-sectional	PDD: 25	MDS criteria	Cognitive impairment screening tools
Camargo, 2018[28]	Brazil	English	Cross-sectional	PDD: 33	MDS criteria	Cognitive impairment screening tools
Souza, 2016[29]	Brazil	English	Cross-sectional	PDD: 40	MDS criteria	Risk factors
Tumas, 2016[30]	Brazil	English	Cross-sectional	PDD: 29	MDS criteria + MOCA score < 21	Cognitive impairment screening tools

(Continues)

23301619, 0, Downloaded from https://movementdisorders.onlinelibrary.wiley.com/doi/10.1002/mdc3.70059 by Norwegian Institute Of Public Healt Invoice Receipt DFO, Wiley Online Library on [21/04/2025]. See the Terms and Conditions (https://onlinelibrary.wiley.com/terms-and-conditions) on Wiley Online Library for rules of use; OA articles are governed by the applicable Creative Commons License

TABLE 1 *Continued*

First author (year)	Country	Language	Study design	Number of patients with LBD	LBD diagnostic criteria	Category
Schelp, 2016[31]	Brazil	English	Cross-sectional	PDD: 46	MDRS	Risk factors
Campos, 2015[32]	Brazil	English	Cross-sectional	PDD: 28	SCOPA-COG Score ≤ 17	Risk factors
Custodio, 2013[33]	Peru	Spanish	Cross-sectional	PDD: 23	DSM IV criteria	Risk factors
Schelp, 2012[34]	Brazil	English	Cross-sectional	PDD: 19	MDRS	Risk factors
Tedrus, 2009[35]	Brazil	English	Cross-sectional	PDD: 7	CDR	Risk factors
Gibson, 2023[36]	Brazil	English	Cross-sectional	LBD: 60 - AD+LBD: 28	Braak Parkinson's disease stage ≥3 and CDR	Neuropsychiatric symptoms
Oliveira, 2015[37]	Brazil	English	Cross-sectional	PDD: 33	MDS criteria	Cognitive impairment screening tools
Calil, 2021[38]	Brazil	English	Cross-sectional	DLB: 20	Fourth consensus of DLB consortium	Neuropsychiatric symptoms
de Oliveira, 2021[21]	Brazil	English	Cross-sectional	DLB: 27	Fourth consensus of DLB consortium	Neuropsychiatric symptoms
Ferreira Camargo 2017[39]	Brazil	English	Cross-sectional	PDD: 40	MDS criteria	Neuropsychiatric symptoms
Josviak, 2017[40]	Brazil	English	Cross-sectional	DLB: 18	Third consensus of DLB consortium	Biomarkers
Oliveira, 2015[41]	Brazil	English	Cross-sectional	DLB: 25 - PDD: 14	Third consensus of DLB consortium and MDS criteria	Neuropsychiatric symptoms
Tabernero, 2017[42]	Argentina	Spanish	Cross-sectional	PDD: 34	MDS criteria	Neuropsychiatric symptoms
Fonseca, 2013[43]	Brazil	English	Cross-sectional	PDD: 12	MDS criteria	Biomarkers
Espínola Nadurille, 2007[44]	Mexico	Spanish	Cross-sectional	DLB: 1	DSM IV criteria	Neuropsychiatric symptoms
Lourenco, 2021[45]	Brazil	English	Cross-sectional	DLB: 9	Not specified	Biomarkers

Abbreviations: CDR, Clinical Dementia Rating; DLB, Dementia with Lewy Bodies; DSM, Diagnostic and Statistical Manual of Mental Disorders; LBD, Lewy Body dementia; MDRS, Mattis Dementia Rating Scale; MDS, Movement Disorder Society; MoCA, Montreal Cognitive Assessment; PDD, Parkinson's Disease Dementia; SCOPA-COG, Scales for Outcomes in Parkinson's Disease Cognition.

23301619, 0, Downloaded from https://movementdisorders.onlinelibrary.wiley.com/doi/10.1002/mdc3.70059 by Norwegian Institute Of Public Healt Invoice Receipt DFO, Wiley Online Library on [21/04/2025]. See the Terms and Conditions (https://onlinelibrary.wiley.com/terms-and-conditions) on Wiley Online Library for rules of use; OA articles are governed by the applicable Creative Commons License

studies related to other biomarkers, such as dopamine transporter scan (DaTscan), myocardial scintigraphy or any magnetic resonance imaging analysis (structural or functional).

Eleven studies (9.2%) assessed cognitive impairment screening tools. For patients with LBD, the Argentine Lewy Body Association (ALBA) screening tool was described.[16] Specifically for PDD, some tools were described: Addenbrooke's Cognitive Examination,[17,18,24,26] the Brazilian version of the Montreal Cognitive Assessment,[18,27,30] Parkinson's Disease-Cognitive Rating Scale (PD-CRS),[22] the Consortium to Establish a Registry for Alzheimer's Disease (CERAD) neuropsychological battery[28] and the Movement Disorders Society checklist for the diagnosis of PDD.[37] These studies focused on the validation, not on the population's cognitive performance.

Intervention Trials

There were only two intervention trials, being no randomized placebo-controlled trials. One non-controlled open-label study[82] found beneficial effects in cognition, with an impact on activities of daily living, in patients with LBD, using cholinesterase inhibitors in 33 LBD patients after 6 months of follow-up. Another non-randomized trial compared the combination of cholinesterase inhibitors plus reality orientation therapy versus drug therapy alone in a 6-month follow-up. In 12 patients with PDD, it was found that combining therapy had better cognitive outcomes.[83]

Lewy Body Dementia as a Subsample in Studies

There were some studies ($n = 34$, 48.6%) that included patients with LBD in a broader and more diverse sample,[46–75,77–79,81] with a total of 1107 patients (293 DLB, 578 PDD, and 236 LBD without discrimination). See Table 2. The mean sample sizes were 15.4 for DLB, 36.1 for PDD, and 47.4 for LBD. Patients were compared to AD in 14 studies, to FTD in eight studies, to VaD in 12 studies and to PD in 18 studies. Various aspects were addressed, including clinical manifestations like rapid eye movement (REM) sleep behavior disorder,[50] cardiovascular symptoms,[62] motor symptoms and response to levodopa challenge,[59] and NPS.[58] Additionally, researchers analyzed the neuropsychological profile, diagnostic tools, and biomarkers in LBD patients, including semantic verbal fluency,[48] the relationship between electroencephalograms (EEG) and mild cognitive impairment (MCI) or dementia in PD patients,[63] and the use of single-photon emission computed tomography (SPECT) for differentiating synucleinopathies.[65]

Two studies[64,66] specifically assessed the performance of clinical tests in LBD patients. One study[64] evaluated the interlocking finger test, while another[66] examined the mentation, behavior, and mood section of the Unified Parkinson's Disease Rating Scale.

Furthermore, CSF analysis indicated that phospho-tau levels were significantly higher in AD compared to other dementias, such as LBD.[69] Finally, neuropsychiatric symptoms, particularly depression, were identified as potential predictors of conversion to dementia in both DLB and PD patients.[67,78] (See Table 2, Supplementary material 3 and 4).

Conclusions

We conducted a scoping review of the literature focused on LBD in LA. To the best of our knowledge, this is the first review to address this topic. Within the limited literature related to LBD, most studies focused on risk factors, clinical manifestations, and diagnostic approaches. Study limitations included small sample sizes, cross-sectional design, and very few studies employed diagnostic biomarkers. This work contributes to identifying gaps, highlighting the need and opportunities for LBD research in the region.

Our results highlight a significant gap in scientific production between LA and other countries. Notably, the United States (US) published more articles on LBD in a single year than LA has in its entire research history (140 publications from 1993 to March 2024 in LA vs. 1777 in the US in 2023 alone, based on a PubMed search). Moreover, research from high-income countries is more frequently published in journals with higher impact factors, further emphasizing the disparity in scientific output and the dissemination of findings between LA and wealthier regions.[84] This gap is also evident within LA itself, with Brazil producing significantly more research than other countries in the region. A similar pattern has been observed in other neurodegenerative diseases, such as FTD.[84] Additionally, the limited economic resources allocated to scientific research in the region further hinder progress in this field.

Our findings also reveal a lack of participation in global research, as supported by the fact that only one study included LA population in a clinical trial,[7] which also represents a lack of participation in global research. This gap not only affects research development but also limits the implementation of prevention and treatment strategies, ultimately challenging the global translatability of findings. For instance, only seven LA countries, Chile, Costa Rica, Cuba, Mexico, Puerto Rico, the Dominican Republic, and Uruguay, have an established national dementia plan.[85]

There is also a big gap between LBD and other dementias, where production in LBD is extremely low when compared with AD or FTD.[84] There is scarce evidence on DLB in underrepresented populations, where the issue may lie not in the low number of people with the disease, but in the limited general knowledge about it, despite LBD being the second most prevalent cause of dementia worldwide.[4] A clear example of this is the similar pattern reported in other regions. In 2014, a systematic review[86] was conducted to summarize the epidemiology of neurodegenerative diseases in sub-Saharan Africa. Out of 144 studies included, only one was related to patients with DLB.[86] In this sense, D'Antonio et al[3] reported that DLB cohorts in LA, Africa, and the Middle East do not reflect its global population or the true prevalence.

23301619, 0, Downloaded from https://movementdisorders.onlinelibrary.wiley.com/doi/10.1002/mdc3.70059 by Norwegian Institute Of Public Healt Invoice Receipt DFO, Wiley Online Library on [21/04/2025]. See the Terms and Conditions (https://onlinelibrary.wiley.com/terms-and-conditions) on Wiley Online Library for rules of use; OA articles are governed by the applicable Creative Commons License

TABLE 2 *Articles that had patients with LBD in the sample*

First author (year)	Country	Language	Study design	Number of patients with LBD	LBD diagnostic criteria	Category
Astolfi Neves, 2022[46]	Brazil	English	Cross-sectional	DLB: 53	Braak Parkinson's disease stage ≥3 and CDR	Mortality
Suemoto, 2019[47]	Brazil	English	Cross-sectional	LBD: $n = 25$ for <80 years and $n = 37$ for ≥80 years	Braak Parkinson's disease stage >3 and CDR	Neuropathology
Wajman, 2019[48]	Brazil	English	Cross-sectional	DLB: 22	Fourth consensus of DLB consortium	Neuropsychological profile and diagnostic accuracy
Suemoto, 2017[49]	Brazil	English	Cross-sectional	LBD: 87	Braak Parkinson's disease stage ≥3 // Third consensus of DLB consortium and MDS criteria	Neuropathology
Munhoz, 2014[50]	Brazil	English	Cross-sectional	DLB: 50	Third consensus of DLB consortium	Clinical manifestations
Yamada, 2002[51]	Brazil	English	Cross-sectional	PDD: 1	Third consensus of DLB consortium and DSM III-R criteria	Prevalence estimation
Pineda, 2000[52]	Colombia	English	Cross-sectional	LBD: 16	First consensus of DLB consortium	Prevalence estimation
Pessoa, 2022[53]	Peru	English	Cross-sectional	DLB: 3 - PDD: 2	DSM V Criteria	Non-pharmacological treatment and follow up
Vale, 2018[54]	Brazil	English	Cross-sectional	PDD: 5 - DLB: 1	DSM IV Criteria	Prevalence estimation
de Moraes, 2017[77]	Brazil	English	Cohort	DLB: 27 - PDD: 18	Not specified	Neuropsychological profile and diagnostic accuracy
Rodríguez-Leyva, 2014[81]	Mexico	English	Case control	DLB: 12	Third consensus of DLB consortium	Biomarkers
Vieira, 2013[55]	Brazil	English	Cross-sectional	DLB: 8	First consensus of DLB consortium	Prevalence estimation
Rodríguez-Violante, 2012[56]	Mexico	Spanish	Cross-sectional	DLB: 10	Third consensus of DLB consortium	Prevalence estimation
Bottino, 2008[57]	Brazil	English	Cross-sectional	DLB: 1 - PDD: 1	DSM IV criteria	Prevalence estimation
Stella, 2009[58]	Brazil	English	Cross-sectional	PDD: 13	DSM IV criteria and MDS criteria	Clinical manifestations
Rossi, 2016[59]	Argentina	English	Cross-sectional	DLB: 1	Not specified	Clinical manifestations
Studart Neto, 2017[60]	Brazil	English	Cross-sectional	DLB: 1	Not specified	Prevalence estimation

(Continues)

23301619, 0, Downloaded from https://movementdisorders.onlinelibrary.wiley.com/doi/10.1002/mdc3.70059 by Norwegian Institute Of Public Healt Invoice Receipt DFO, Wiley Online Library on [21/04/2025]. See the Terms and Conditions (https://onlinelibrary.wiley.com/terms-and-conditions) on Wiley Online Library for rules of use; OA articles are governed by the applicable Creative Commons License

TABLE 2 *Continued*

First author (year)	Country	Language	Study design	Number of patients with LBD	LBD diagnostic criteria	Category
Libre Rodríguez, 2009[61]	Cuba	English	Cross-sectional	DLB: 5 - PDD: 33	DSM IV criteria and Operational criteria for SDLT	Prevalence estimation
Idiaquez, 2007[62]	Chile	English	Cross-sectional	PDD: 11	DSM IV criteria	Clinical manifestations
Fonseca, 2009[63]	Brazil	English	Cross-sectional	PDD: 7	DSM IV criteria	Diagnostic tools
Souza, 2016[64]	Brazil	English	Cross-sectional	PDD: 41	MDS criteria	Supporting clinical tests
Fabiani, 2022[65]	Brazil	English	Cross-sectional	DLB: 16	Fourth consensus of DLB consortium	Diagnostic tools
Taragano, 2018[78]	Argentina	English	Cohort	DLB: 28	First consensus of DLB consortium	Risk factors and predictors
Starkstein, 2007[66]	Argentina	English	Cross-sectional	PDD: 62	DSM IV criteria	Supporting clinical tests
Chagas, 2015[67]	Brazil	English	Cross-sectional	PDD: 24	DSM IV criteria and CSI-D	Risk factors and predictors
Nunes, 2022[68]	Brazil	English	Cross-sectional	LBD: 68	Braak Parkinson's disease stage ≥3 and CDR	Neuropathology
Hartmann, 2014[69]	Brazil	English	Cross-sectional	DLB: 2	First consensus of DLB consortium	Biomarkers
Fernandes, 2015[79]	Brazil	English	Cohort	PDD: 51	Minimental State Examination ≤23	Mortality
Vale, 2023[70]	Brazil	English	Cross-sectional	PDD: 37	BCSB, FAQ scores and DSM IV criteria.	Clinical manifestations
Munhoz, 2010[74]	Brazil	English	Cross-sectional	DLB: 42	Third consensus of DLB consortium and DSM IV criteria	Prevalence estimation
Balestrassi, 2021[73]	Brazil	English	Cross-sectional	LBD: 4	Not specified	Prevalence estimation
Rodríguez-de-Paula, 2018[71]	Brazil	English	Cross-sectional	PDD: 230	MOCA score < 21	Non-pharmacological treatment and follow up
Ferretti, 2018[72]	Brazil	English	Cross-sectional	DLB: 1	Not specified	Economic analysis
Moscovich, 2017[75]	Brazil	English	Cross-sectional	DLB: 10 and PDD: 42	Third consensus of DLB consortium and MDS criteria	Mortality

Abbreviations: BCSB, Brief Cognitive Screening Battery; CDR, Clinical Dementia Rating; DLB, Dementia with Lewy Bodies; DSM, Diagnostic and Statistical Manual of Mental Disorders; FAQ, Functional Activities Questionnaire; LBD, Lewy Body dementia; MDS, Movement Disorder Society; PDD, Parkinson's Disease Dementia; SDLT, senile dementia Lewy body type.

23301619, 0, Downloaded from https://movementdisorders.onlinelibrary.wiley.com/doi/10.1002/mdc3.70059 by Norwegian Institute Of Public Healt Invoice Receipt DFO, Wiley Online Library on [21/04/2025]. See the Terms and Conditions (https://onlinelibrary.wiley.com/terms-and-conditions) on Wiley Online Library for rules of use; OA articles are governed by the applicable Creative Commons License

Improving clarity and accessibility of diagnostic criteria is essential, from medical education to continuous training for healthcare professionals in both primary and specialized care. Early suspicion and accurate detection of LBD are crucial for timely treatment and for recruiting participants in research studies.

A key step in advancing dementia research in Latin America is the development of regional initiatives like COL-DLB[9] and ReDLat.[2] These efforts focus on generating local data to address research gaps, improve representation in global studies, and strengthen international collaboration. Drawing from our experience, a way forward includes establishing standardized protocols, expanding research networks, and securing sustainable funding. Similar approaches have been successful in other disease areas, and aligning dementia research with these models could enhance impact.

The prevalence of LBD in Latin America may be influenced by several factors, including confusion with more dementias such as AD or, more commonly, vascular pathology, both of which have variable clinical presentations and contribute to misdiagnosis.[44] Genetic diversity also plays a role. LA populations have varying degrees of European ancestry, averaging 50–60%, with some countries exceeding 70–80%.[87–89] While genetic similarities suggest comparable prevalence rates to European countries, disparities in healthcare access, awareness, and diagnostic practices likely contribute to variations. Further research is needed to clarify these influences and ensure accurate recognition of LBD across different populations.

This review has some limitations. Despite efforts to include all studies, there might be inherent biases in the selection process, such as those not indexed in the selected databases, albeit we included Embase, used a comprehensive search strategy, did not include any filter related to published year, and articles in English, Spanish or Portuguese were considered. Also, variability across included studies in terms of population characteristics, interventions, outcomes, and study designs limited the ability to pool data, and the quality of primary studies varied, which might impact the overall reliability of the findings. Also, as different studies may use data from the same cohort, it is important to acknowledge that the number of patients included may be lower. We did not specify or differentiate between MCI and dementia in the results due to insufficient data on cognitive decline severity and dementia grading. Besides, our results may not be universally applicable due to the differences in study populations, settings, or measuring tools, limiting generalizability. However, to the best of our knowledge, this is the first review of LBD research in this region. We believe our study can complement existing research consortia,[3,9,10] such as COL-DLB,[9] which is currently recruiting patients in three cities to monitor clinical and paraclinical variables, including biomarkers. Furthermore, this study can pave the way for new research collaborations that will benefit LBD patients in LA. These collaborations are essential for overcoming the challenges of conducting research in the region, such as limited funding and scarce resources.

Finally, we call for action to increase awareness and promote original research in this region. Some ongoing initiatives are being conducted in collaboration with global and European networks, such as E-DLB and the LBD Professional Interest Area.[3,9,10] However, we emphasize the need for clinical trials and well-designed longitudinal studies to inform public policies based on local data. Currently, diagnostic and treatment guidelines rely on data from other countries and consortia, highlighting the urgency for generating region-specific evidence.[3]

Author Roles

(1) Research project: A. Conception, B. Organization, C. Execution; (2) Methodological Analysis: A. Design, B. Execution, C. Review and Critique; (3) Manuscript Preparation: A. Writing of the first draft, B. Review and Critique, C. Review and approval.

C.C.G.: 1A, 1B, 2C, 3B, 3C.
S.S.L.: 1A, 1C, 2B, 3A, 3C.
F.B.R.: 1B, 2A, 2C, 3B, 3C.
S.P.G.: 1B, 1C, 2B, 3A, 3C.
S.G.: 1B, 1C, 2B, 3A, 3C.
J.M.S.E.: 2C, 3B, 3C.
D.A.: 1A, 2C, 3B, 3C.
M.G.B.: 1A, 1B, 2C, 3B, 3C.

Disclosures

Ethical Compliance Statement: We carried out a scoping review according to the PRISMA Extension for Scoping Reviews (PRISMA-ScR). Being a scoping review, it did not need IRB approval, nor informed patient consent was not necessary for this work. We confirm that we have read the Journal's position on issues involved in ethical publication and affirm that this work is consistent with those guidelines.

Funding Sources and Conflict of Interest: The study funding was provided by the Norwegian Health Association. Also, funded by the National Institute for Health Research (NIHR) Biomedical Research Centre at South London and Maudsley NHS Foundation Trust and King's College London. The authors declare that there are no conflicts of interest relevant to this work.

Financial Disclosures for the Previous 12 Months: The authors declare that there are no additional disclosures to report.

Data Availability Statement

The data that support the findings of this study are available from the corresponding author upon reasonable request.■

References

1. Brijnath B, Croy S, Sabates J, et al. Including ethnic minorities in dementia research: recommendations from a scoping review. *Alzheimers Dement* 2022;8(1):e12222.

23301619, 0, Downloaded from https://movementdisorders.onlinelibrary.wiley.com/doi/10.1002/mdc3.70059 by Norwegian Institute Of Public Healt Invoice Receipt DFO, Wiley Online Library on [21/04/2025]. See the Terms and Conditions (https://onlinelibrary.wiley.com/terms-and-conditions) on Wiley Online Library for rules of use; OA articles are governed by the applicable Creative Commons License

2. Parra MA, Garcia AM, Ibanez Sr A. Addressing dementia challenges through international networks: evidence from the Latin American and Caribbean Consortium on Dementia (LAC-CD). *Alzheimers Dement* 2021;17(Suppl 8):e055106.

3. D'Antonio F, Kane JPM, Ibañez A, et al. Dementia with Lewy bodies research consortia: a global perspective from the ISTAART Lewy Body Dementias Professional Interest Area working group. *Alzheimers Dement (Amst)* 2021;13(1):e12235.

4. Killen A, Thompson R, Bentley A. Dementia with Lewy bodies. In: *World Alzheimer Report 2022*. London: Alzheimer Disease International; 2022.

5. Vann Jones SA, O'Brien JT. The prevalence and incidence of dementia with Lewy bodies: a systematic review of population and clinical studies. *Psychol Med* 2014;44(4):673–683.

6. Boström F, Jönsson L, Minthon L, Londos E. Patients with dementia with lewy bodies have more impaired quality of life than patients with Alzheimer disease. *Alzheimers Dement* 2007;21(2):150–154. https://doi.org/10.1097/WAD.0b013e318065c4a9.

7. Abdelnour C, Gonzalez MC, Gibson LL, Poston KL, Ballard CG, Cummings JL, Aarsland D. Dementia with Lewy bodies drug therapies in clinical trials: systematic review up to 2022. *Neurol Ther* 2023;12(3): 727–749.

8. Simuni T, Chahine LM, Poston K, et al. A biological definition of neuronal α-synuclein disease: towards an integrated staging system for research. *Lancet Neurol* 2024;23(2):178–190.

9. Borda MG, Lopera F, Buritica O, et al. Colombian consortium for the study of Lewy body dementia COL-DLB. *J Neurol Sci* 2020;412:116807.

10. Oppedal K, Borda MG, Ferreira D, Westman E, Aarsland D, European DLB Consortium. European DLB consortium: diagnostic and prognostic biomarkers in dementia with Lewy bodies, a multicenter international initiative. *Neurodegener Dis Manag* 2019;9(5):247–250.

11. Santamaria-Garcia H, Sainz-Ballesteros A, Hernandez H, et al. Factors associated with healthy aging in Latin American populations. *Nat Med* 2023;29(9):2248–2258.

12. Tricco AC, Lillie E, Zarin W, et al. PRISMA extension for scoping reviews (PRISMA-ScR): checklist and explanation. *Ann Intern Med* 2018;169(7):467–473.

13. O'Connor D, Green S, Higgins JP. Defining the review question and developing criteria for including studies. *In: Higgins JPT, Green S, eds. Cochrane Handbook for Systematic Reviews of Interventions*. Chichester; 2008: 81–94.

14. de Oliveira FF, Machado FC, Sampaio G, Marin SMC, Naffah-Mazzacoratti MDG, Bertolucci PHF. Neuropsychiatric feature profiles of patients with Lewy body dementia. *Clin Neurol Neurosurg* 2020;194: 105832.

15. Camargo CHF, Jobbins VA, Serpa RA, Berbetz FA, Sabatini JS, Teive HAG. Association between olfactory loss and cognitive deficits in Parkinson's disease. *Clin Neurol Neurosurg* 2018;173:120–123.

16. Garcia Basalo MM, Fernandez MC, Ojea Quintana M, et al. ALBA screening instrument (ASI): a brief screening tool for Lewy Body Dementia. *Arch Gerontol Geriatr* 2017;70:67–75.

17. Rocha MSG, Bassetti EM, Oliveira MO, Kuark RGB, Estevam NM, Brucki SMD. Addenbrooke's cognitive examination-revised is accurate for detecting dementia in Parkinson's disease patients with low educational level. *Dement Neuropsychol* 2014;8(1):20–25.

18. Sobreira E, Pena-Pereira MA, Eckeli AL, Sobreira-Neto MA, Chagas MH, Foss MP, et al. Screening of cognitive impairment in patients with Parkinson's disease: diagnostic validity of the Brazilian versions of the Montreal Cognitive Assessment and the Addenbrooke's Cognitive Examination-Revised. *Arq Neuropsiquiatr* 2015;73(11):929–933.

19. Luciano PM, Beguería SR, Luciano PMM, Fontes Mestre M. Demencia en la enfermedad de Parkinson. *Rev Arch Med Camaguey* 2003;7: 131–139.

20. Machado FC, Oliveira FFD, Marin SDMC, Sampaio G, Bertolucci PHF. Correlates of neuropsychiatric and motor tests with language assessment in patients with Lewy body dementia. *Arch Clin Psychiatry Sao Paulo* 2020;47(3):75–81. https://doi.org/10.1590/0101-60830000000236.

21. de Oliveira FF, Miraldo MC, de Castro-Neto EF, de Almeida SS, Matas SLA, Bertolucci PHF, et al. Associations of neuropsychiatric features with cerebrospinal fluid biomarkers of amyloidogenesis and neurodegeneration in dementia with Lewy bodies compared with Alzheimer's disease and cognitively healthy people. *J Alzheimers Dis* 2021;81(3):1295–1309.

22. Clavijo-Moran HJC, Álvarez-García D, Pinilla-Monsalve GD, Muñoz-Ospina B, Orozco J. Psychometric properties and construct validity of the Parkinson's disease-cognitive rating scale (PD-CRS) in Colombia. *Front Psychol* 2022;13:1018176.

23. Sobreira EST, Sobreira-Neto MA, Pena-Pereira MA, Chagas MHN, Fernandes RMF, Eckeli AL, Tumas V. Global cognitive performance is associated with sleep efficiency measured by polysomnography in patients with Parkinson's disease. *Psychiatry Clin Neurosci* 2019;73(5):248–253.

24. Sousa NMF, Brucki SMD. Addenbrooke's cognitive examination III: diagnostic utility for detecting mild cognitive impairment and dementia in Parkinson's disease. *Arq Neuropsiquiatr* 2023;81(2):155–163.

25. Camargo CHF, Serpa RA, Matnei T, Sabatini JS, Teive HAG. The perception of apathy by caregivers of patients with dementia in Parkinson's disease. *Dement Neuropsychol* 2016;10(4):339–343.

26. Reyes MA, Perez-Lloret S, Roldan Gerschcovich E, Martin ME, Leiguarda R, Merello M. Addenbrooke's cognitive examination validation in Parkinson's disease. *Eur J Neurol* 2009;16(1):142–147. https://doi.org/10.1111/j.1468-1331.2008.02384.x.

27. Almeida KJ, Carvalho L, Monteiro T, Gonçalves PCJ, Campos-Sousa RN. Cut-off points of the Portuguese version of the Montreal Cognitive Assessment for cognitive evaluation in Parkinson's disease. *Dement Neuropsychol* 2019;13(2):210–215. https://doi.org/10.1590/1980-57642018dn13-020010.

28. Camargo CHF, Bronzini A, Tolentino ES, Medyk C, Schultz-Pereira GL. Can the CERAD neuropsychological battery be used to assess cognitive impairment in Parkinson's disease? *Arq Neuropsiquiatr* 2018;76(3):145–149. https://doi.org/10.1590/0004-282x20180003.

29. Souza CP, Oliveira GN, Foss MP, Tumas V. Cluster analysis of cognitive performance in a sample of patients with Parkinson's disease. *Dement Neuropsychol* 2016;10(4):315–319.

30. Tumas V, Borges V, Ballalai-Ferraz H, Zabetian CP, Mata IF, Brito MMC, et al. Some aspects of the validity of the Montreal Cognitive Assessment (MoCA)for evaluating cognitive impairment in Brazilian patients with Parkinson's disease. *Dementia & Neuropsychologia* 2016;10(4): 333–338.

31. Schelp AO, Mendes-Chiloff CL, Paduan VC, et al. Delayed recall memory impairment in patients with Parkinson's disease. *Dement Neuropsychol* 2016; 10(3):204–209. https://doi.org/10.1590/S1980-5764-2016DN1003006.

32. Campos LS, Guimarães RP, Piovesana LG, Azevedo PC, Santos LM, D'Abreu A. Clinical predictors of cognitive impairment and psychiatric complications in Parkinson's disease. *Arq Neuropsiquiatr* 2015;73(5):390–395. https://doi.org/10.1590/0004-282X20150016.

33. Custodio N, Bendezú L, Castro-Suárez S, Herrera-Pérez E, Lira D, Montesinos R, et al. Características neuropsicológicas de pacientes con deterioro cognitivo leve y demencia asociada a la enfermedad de Parkinson. *Rev Neuro Psiquiatr* 2014;76(4):246.

34. Schelp AO, Mendes-Chiloff CL, Bazan R, Paduan VC, Pioltini AB. Metabolic syndrome and dementia associated with Parkinson's disease: impact of age and hypertension. *Arq Neuropsiquiatr* 2012;70(2):114–118. https://doi.org/10.1590/s0004-282x2012000200008.

35. Tedrus GM, Fonseca LC, Letro GH, Bossoni AS, Samara AB. Dementia and mild cognitive impairment in patients with Parkinson's disease. *Arq Neuropsiquiatr* 2009;67(2b):423–427. https://doi.org/10.1590/s0004-282x2009000300010.

36. Gibson LL, Grinberg LT, Ffytche D, et al. Neuropathological correlates of neuropsychiatric symptoms in dementia. *Alzheimers Dement* 2023; 19(4):1372–1382.

37. Oliveira GN, Souza CP, Foss MP, Tumas V. An analysis of the cognitive items of the movement disorders society checklist for the diagnosis of dementia in patients with Parkinson's disease. *Parkinsonism Relat Disord* 2015;21(10):1260–1263.

38. Calil V, Silveira de Souza A, Sudo FK, et al. Anosognosia for memory in dementia with Lewy bodies compared with Alzheimer's disease. *Int J Geriatr Psychiatry* 2021;36(7):1059–1064.

39. Camargo CHF, Serpa RA, Jobbins VA, Berbetz FA, Sabatini JS. Differentiating between apathy and depression in patients with Parkinson disease dementia. *Am J Alzheimers Dis Other Demen* 2018;33(1):30–34.

40. Josviak ND, Batistela MS, Souza RKM, et al. Plasma butyrylcholinesterase activity: a possible biomarker for differential diagnosis between Alzheimer's disease and dementia with Lewy bodies? *Int J Neurosci* 2017;127(12):1082–1086.

41. Oliveira FF, Machado FC, Sampaio G, Marin SM, Chen ES, Smith MC, Bertolucci PH. Contrasts between patients with Lewy body dementia

23301619, 0, Downloaded from https://movementdisorders.onlinelibrary.wiley.com/doi/10.1002/mdc3.70059 by Norwegian Institute Of Public Healt Invoice Receipt DFO, Wiley Online Library on [21/04/2025]. See the Terms and Conditions (https://onlinelibrary.wiley.com/terms-and-conditions) on Wiley Online Library for rules of use; OA articles are governed by the applicable Creative Commons License

syndromes and APOE-ε3/ε3 patients with late-onset Alzheimer disease dementia. *Neurologist* 2015;20(2):35–41. https://doi.org/10.1097/NRL.0000000000000045.

42. Tabernero ME, Musich F, Cossini FC, Politis DG. Social cognition in Parkinson's disease dementia and behavioral variant of frontotemporal dementia. *Rev Neurol* 2017;65(12):539–545.
43. Fonseca LC, Tedrus GM, Carvas PN, Machado EC. Comparison of quantitative EEG between patients with Alzheimer's disease and those with Parkinson's disease dementia. *Clin Neurophysiol* 2013;124(10):1970–1974. https://doi.org/10.1016/j.clinph.2013.05.001.
44. Espínola Nadurille M, Dolores Velasco F, Ramírez-Bermúdez J, Sosa Ortiz AL, Becerra Pino M. Baja frecuencia clínica de la demencia por cuerpos de Lewy en el Instituto de Neurología de México. *Rev Esp Geriatr Gerontol* 2007;42(6):328–332. https://doi.org/10.1016/S0211-139X(07)73571-0.
45. Lourenco MV, Ribeiro FC, Santos LE, et al. Cerebrospinal fluid neurotransmitters, cytokines, and chemokines in Alzheimer's and Lewy body diseases. *J Alzheimers Dis* 2021;82(3):1067–1074.
46. Astolfi Neves B, Villela Nunes P, Diehl Rodriguez R, Medeiros Haidar A, Elaine Paraizo Leite R, Nascimento C, et al. Cause of death determined by full-body autopsy in neuropathologically diagnosed dementias: the biobank for aging studies of the University of Sao Paulo (BAS-USP), Brazil. *Alzheimers Dement* 2022;36(2):156–161.
47. Suemoto CK, Leite REP, Ferretti-Rebustini REL, et al. Neuropathological lesions in the very old: results from a large Brazilian autopsy study. *Brain Pathol* 2019;29(6):771–781.
48. Wajman JR, Cecchini MA, Bertolucci PHF, Mansur LL. Quanti-qualitative components of the semantic verbal fluency test in cognitively healthy controls, mild cognitive impairment, and dementia subtypes. *Appl Neuropsychol Adult* 2019;26(6):533–542.
49. Suemoto CK, Ferretti-Rebustini RE, Rodriguez RD, et al. Neuropathological diagnoses and clinical correlates in older adults in Brazil: a cross-sectional study. *PLoS Med* 2017;14(3):e1002267. https://doi.org/10.1371/journal.pmed.1002267.
50. Munhoz RP, Teive HA. REM sleep behaviour disorder: how useful is it for the differential diagnosis of parkinsonism? *Clin Neurol Neurosurg* 2014;127:71–74.
51. Yamada T, Kadekaru H, Matsumoto S, et al. Prevalence of dementia in the older Japanese-Brazilian population. *Psychiatry Clin Neurosci* 2002;56(1):71–75.
52. Pineda DA, Buritica O, Sánchez JL, Uribe CS, Arana A. Parkinsonian syndromes in Medellin (Colombia). *Rev Neurol* 2000;31(10):936–943.
53. Lima DP, Queiroz IB, Carneiro AHS, et al. Feasibility indicators of telemedicine for patients with dementia in a public hospital in Northeast Brazil during the COVID-19 pandemic. *PLoS One* 2022;17(5):e0268647.
54. Vale TC, Barbosa MT, Resende EPF, et al. Parkinsonism in a population-based study of individuals aged 75+ years: the Pietà study. *Parkinsonism Relat Disord* 2018;56:76–81. https://doi.org/10.1016/j.parkreldis.2018.06.030.
55. Vieira RT, Barros NM, Caixeta L, Machado S, Silva AC, Nardi AE. Clinical diagnosis of 80 cases of dementia in a university hospital. *J Bras Psiquiatr* 2013;62(2):139–143. https://doi.org/10.1590/S0047-20852013000200007.
56. Rodríguez-Violante M, Cervantes-Arriaga A, Morales-Briceño H, Martínez-Ramírez D, Martínez-Bernal F, Corona T. Prevalence of atypical parkinsonism in the movement disorders clinic of a referral hospital in Mexico City. *Rev Mex Neuroci* 2012;13(6):5.
57. Bottino CM, Azevedo D Jr, Tatsch M, et al. Estimate of dementia prevalence in a community sample from São Paulo, Brazil. *Dement Geriatr Cogn Disord* 2008;26(4):291–299. https://doi.org/10.1159/000161053.
58. Stella F, Banzato CE, Quagliato EM, Viana MA, Christofoletti G. Psychopathological features in patients with Parkinson's disease and related caregivers' burden. *Int J Geriatr Psychiatry* 2009;24(10):1158–1165. https://doi.org/10.1002/gps.2240.
59. Rossi M, Wilken M, Morisset P, Fariña S, Cerquetti D, Merello M. Facial tremors in patients with and without parkinsonism. *Neurol Sci* 2016;37(12):1999–2002.
60. Studart Neto A, Soares Neto HR, Simabukuro MM, et al. Rapidly progressive dementia: prevalence and causes in a neurologic unit of a tertiary Hospital in Brazil. *Alzheimer Dis Assoc Disord* 2017;31(3):239–243.
61. Llibre Jde J, Fernández Y, Marcheco B, et al. Prevalence of dementia and Alzheimer's disease in a Havana municipality: a community-based study among elderly residents. *MEDICC Rev* 2009;11(2):29–35.
62. Idiaquez J, Benarroch EE, Rosales H, Milla P, Ríos L. Autonomic and cognitive dysfunction in Parkinson's disease. *Clin Auton Res* 2007;17(2):93–98.
63. Fonseca LC, Tedrus GM, Letro GH, Bossoni AS. Dementia, mild cognitive impairment and quantitative EEG in patients with Parkinson's disease. *Clin EEG Neurosci* 2009;40(3):168–172. https://doi.org/10.1177/155005940904000309.
64. Souza CP, Oliveira GN, Foss MP, Tumas V. The interlocking finger test in patients with Parkinson's disease and healthy subjects. *J Clin Neurosci* 2016;29:145–148.
65. Fabiani G, Camargo CHF, Filho RM, Froehner GS, Teive HAG. Evaluation of brain SPECT with (99m)Tc-TRODAT-1 in the differential diagnosis of parkinsonism. *Parkinson Dis* 2022;2022:1746540.
66. Starkstein SE, Merello M. The unified Parkinson's disease rating scale: validation study of the mentation, behavior, and mood section. *Mov Disord* 2007;22(15):2156–2161.
67. Chagas MH, Moriyama TS, Felício AC, Sosa AL, Bressan RA, Ferri CP. Depression increases in patients with Parkinson?s disease according to the increasing severity of the cognitive impairment. *Arq Neuropsiquiatr* 2014;72(6):426–429. https://doi.org/10.1590/0004-282x20140049.
68. Nunes PV, Suemoto CK, Rodriguez RD, et al. Neuropathology of depression in non-demented older adults: a large postmortem study of 741 individuals. *Neurobiol Aging* 2022;117:107–116.
69. Hartmann AP, Almeida SM, Livramento JA, Nitrini R, Takahashi D, Caramelli P. Hyperphosphorylated tau protein in the cerebrospinal fluid of patients with Alzheimer's disease and other dementias: preliminary findings. *Arq Neuropsiquiatr* 2004;62(3b):751–755.
70. Vale TC, Cardoso FEC, da Silva DJ, et al. Clinical and functional correlates of parkinsonism in a population-based sample of individuals aged 75 +: the Pietà study. *BMC Neurol* 2023;23(1):276. https://doi.org/10.1186/s12883-023-03290-8.
71. Rodrigues-de-Paula F, Lana RC, Lopes LKR, et al. Determinants of the use of physiotherapy services among individuals with Parkinson's disease living in Brazil. *Arq Neuropsiquiatr* 2018;76(9):592–598. https://doi.org/10.1590/0004-282X20180087.
72. Ferretti C, Sarti FM, Nitrini R, Ferreira FF, Brucki SMD. An assessment of direct and indirect costs of dementia in Brazil. *PLoS One* 2018;13(3):e0193209.
73. Balestrassi LS, Silva S. Descriptive epidemiological study on patients with movement disorders, with emphasis on Parkinson's disease. *Sao Paulo Med J* 2021;139(1):30–37. https://doi.org/10.1590/1516-3180.2020.0119.R1.30102020.
74. Munhoz RP, Werneck LC, Teive HA. The differential diagnoses of parkinsonism: findings from a cohort of 1528 patients and a 10 years comparison in tertiary movement disorders clinics. *Clin Neurol Neurosurg* 2010;112(5):431–435.
75. Moscovich M, Boschetti G, Moro A, Teive HAG, Hassan A, Munhoz RP. Death certificate data and causes of death in patients with parkinsonism. *Parkinsonism Relat Disord* 2017;41:99–103.
76. de Oliveira FF, Miraldo MC, de Castro-Neto EF, Almeida SS, Matas SLA, Bertolucci PHF, Naffah-Mazzacoratti MDG. Differential associations of clinical features with cerebrospinal fluid biomarkers in dementia with Lewy bodies and Alzheimer's disease. *Aging Clin Exp Res* 2023;35(8):1741–1752.
77. de Moraes FM, Bertolucci PHF. Clinical variables related to the diagnostic stability of demential syndromes. *Int Psychogeriatr* 2017;29(10):1735–1741.
78. Taragano FE, Allegri RF, Heisecke SL, et al. Risk of conversion to dementia in a mild behavioral impairment group compared to a psychiatric group and to a mild cognitive impairment group. *J Alzheimers Dis* 2018;62(1):227–238.
79. Fernandes GC, Socal MP, Schuh AF, Rieder CR. Clinical and epidemiological factors associated with mortality in Parkinson's disease in a Brazilian cohort. *Parkinsons Dis* 2015;2015:959304.
80. Golimstok A, Rojas JI, Romano M, Zurru MC, Doctorovich D, Cristiano E. Previous adult attention-deficit and hyperactivity disorder symptoms and risk of dementia with Lewy bodies: a case-control study. *Eur J Neurol* 2011;18(1):78–84.
81. Rodríguez-Leyva I, Calderón-Garcidueñas AL, Jiménez-Capdeville ME, et al. α-Synuclein inclusions in the skin of Parkinson's disease and parkinsonism. *Ann Clin Transl Neurol* 2014;1(7):471–478.
82. Custodio N, Montesinos R, Bendezú L, Cortijo P, Torres H, Escobar J. Efectos de inhibidores de colinesterasa en pacientes con enfermedad asociada a cuerpos de Lewy. *An Fac Med* 2008;69:157–162.

23301619, 0, Downloaded from https://movementdisorders.onlinelibrary.wiley.com/doi/10.1002/mdc3.70059 by Norwegian Institute Of Public Healt Invoice Receipt DFO, Wiley Online Library on [21/04/2025]. See the Terms and Conditions (https://onlinelibrary.wiley.com/terms-and-conditions) on Wiley Online Library for rules of use; OA articles are governed by the applicable Creative Commons License

83. Camargo CHF, Ladeira MA, Serpa RA, Jobbins VA, Filho CRP, Welling LC, Teive HAG. The effectiveness of reality orientation therapy in the treatment of Parkinson disease dementia. *Am J Alzheimers Dis Other Demen* 2018;34(2):1533317518802461.

84. Duran-Aniotz C, Orellana P, Leon Rodriguez T, et al. Systematic review: genetic, neuroimaging, and fluids biomarkers for frontotemporal dementia across Latin America countries. *Front Neurol* 2021;12:663407.

85. Sosa AL, Brucki SM, Crivelli L, et al. Advancements in dementia research, diagnostics, and care in Latin America: highlights from the 2023 Alzheimer's Association International conference satellite symposium in Mexico City. *Alzheimers Dement* 2024;20(7):5009–5026. https://doi.org/10.1002/alz.13850.

86. Lekoubou A, Echouffo-Tcheugui JB, Kengne AP. Epidemiology of neurodegenerative diseases in sub-Saharan Africa: a systematic review. *BMC Public Health* 2014;14(1):653.

87. Ramos C, Aguillon D, Cordano C, Lopera F. Genetics of dementia: insights from Latin America. *Dement Neuropsychol* 2020;14(3):223–236.

88. Ruiz-Linares A, Adhikari K, Acuña-Alonzo V, et al. Admixture in Latin America: geographic structure, phenotypic diversity and self-perception of ancestry based on 7,342 individuals. *PLoS Genet* 2014;10(9):e1004572.

89. Acosta-Uribe J, Aguillón D, Cochran JN, et al. A neurodegenerative disease landscape of rare mutations in Colombia due to founder effects. *Genome Med* 2022;14(1):27.

APPENDIX A

Members of COL-DLB are: Felipe Botero-Rodriguez, Miguel Germán Borda, Omar Buritica, Catalina Cerquera-Cleves, Maria Camila Gonzalez, Elkin Garcia-Cifuentes, Alberto Jaramillo-Jimenez, David Aguillon, Yamile Bocanegra, Beatriz Elena Munoz-Ospina, Carlos Alberto Cano-Gutierrez, Carlos Tobón, Hernando Santamaría-García, José Manuel Santacruz-Escudero, Dag Aarsland, Jorge Orozco, Salomon Salazar-Londoño, Luis Carlos Venegas-Sanabria, Salomón Páez-García, Francisco Lopera, Juan Camilo Castro, Patrick Verhelst Forero, Alexandra Ferreirós.

Supporting Information

Supporting information may be found in the online version of this article.

Supplementary material 1. Search strategy.

Supplementary material 2. Lewy body disease as a subsample in the study.

Supplementary material 3. Full data on articles that were oriented to the study of patients with LBD.

Supplementary material 4. Full data on articles that had patients with LBD in the sample.

23301619, 0, Downloaded from https://movementdisorders.onlinelibrary.wiley.com/doi/10.1002/mdc3.70059 by Norwegian Institute Of Public Healt Invoice Receipt DFO, Wiley Online Library on [21/04/2025]. See the Terms and Conditions (https://onlinelibrary.wiley.com/terms-and-conditions) on Wiley Online Library for rules of use; OA articles are governed by the applicable Creative Commons License