Neurocognitive Disorders in DSM-5

The introduction of the diagnosis "mild neurocognitive disorder" is the crucial change in the diagnostic criteria for the neurocognitive disorders chapter of DSM-5 (previously entitled "Delirium, Dementia, and Amnestic and Other Cognitive Disorders" in DSM-IV) (1). Except in the case of delirium, the first step in the diagnostic process will be to differentiate between normal neurocognitive function, mild neurocognitive disorder (mild NCD), and major neurocognitive disorder (major NCD or dementia). The second step will be to assign an etiological category, such as Alzheimer's NCD, vascular NCD, or frontotemporal NCD. Although neurocognitive dysfunction in older adults is usually analogous in the clinician's mind to learning and memory problems, DSM-5 also includes complex attention, executive function, language, perceptual motor problems, and social cognition among the neurocognitive domains that can be impaired by an NCD.

The movement to diagnose NCDs upstream reflects an emerging literature that confirms both the improvement in early diagnostic determinations and the recognition that the neuropathology underlying these disorders emerges well before the onset of clinical symptoms. This change, however, has been criticized in the scientific literature and in the popular press (2, 3). Distinguishing between mild NCD and major NCD is challenged by some neurologists to be an artificial threshold dependent upon the subjective judgment of the clinician and therefore can blur the fact that the NCDs (specifically Alzheimer's NCD) begin even before symptoms emerge (2, 4). Both sides of the debate, however, support diagnoses earlier in the disease process. The criticism in the lay literature, supported by some psychiatrists, has focused on concern that expanding the diagnosis of NCDs upstream will lead to diagnosis in individuals with no disorder, resulting in expensive and unnecessary diagnostic tests as well as the institution of treatments that are unproven (3).

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What is the rationale for including mild NCD in DSM-5? There is a clear and logical clinical justification for expanding our diagnostic categories to include mild NCD, or what has been described most frequently as mild cognitive impairment (4). Individuals in later life often seek medical and psychiatric evaluation for neurocognitive problems that do not meet the criteria for a major NCD but are clearly disturbing them. These individuals frequently fall below the normal range of function on neuropsychological testing, but their signs and symptoms are not severe enough to be classified as major NCD or what we have traditionally labeled dementia (objective evidence from such tests are required for the diagnosis of mild NCD). Although they may be living independently, they struggle with activities of daily living and express this difficulty. Given these impairments, these individuals are often comforted to know that their health

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care providers recognize their problem and can provide some guidance as to interventions such as memory enhancement and augmentation strategies. They are frequently both reassured and realistic about the prognosis; many will not progress to a major NCD, but the probability of doing so is greater, and they may wish to make plans given their potential to experience more severe problems over time than individuals without mild NCD. Patients with mild NCD experience a very real problem, seek help for that problem, wish their health care providers would recognize (and usually name) the problem, and desire guidance for managing the problem.

There is also a clear and logical empirical basis for including this diagnosis in DSM-5. Alzheimer's NCD is our best model. Although no definitive pharmacological intervention is currently available, the Food and Drug Administration has approved four medications for the treatment of mild NCD secondary to Alzheimer's NCD that have demonstrated some retardation of the disease over months if not years (donepezil, rivastigmine, galantamine, and memantine). Virtually all investigators recognize that once a safe medication is available that may permanently retard or reverse the course of the NCD, the time for intervention will be early in the development of the disease, whatever the etiology.

Biological markers for Alzheimer's disease appear well before the onset of symptoms such as memory problems and functional impairment. Markers focus on both amyloid and tau and include CSF measures of lower β-amyloid protein levels (5) and positron emission tomography (PET) evidence of β-amyloid deposition (6) using a variety of specific ligands. Markers of tau accumulation include CSF measures of elevated total tau or phosphorylated-tau (7). These markers appear before—often years before—the onset of symptoms of NCD. A combination of symptoms of mild NCD and biomarker support significantly increases the likelihood that mild NCD will progress to major NCD (4, 8). A word of caution, however: although we are pushing the diagnosis and treatment increasingly upstream in the disease process of NCDs, we have yet to identify a sensitive and specific biological marker, just as we have not identified a definitive treatment for most disorders.

Given the accumulating evidence in this fast-emerging field (we read about a new genetic marker, diagnostic test, or potential therapy almost weekly in the popular press), coupled with the heightened sensitivity in our patients to early signs of neurocognitive impairment across a number of domains and the empirical basis for an early diagnosis of impairment, the time has come for the inclusion of mild NCD in our nomenclature. In the view of our workgroup, the evidence is substantial for such inclusion.

Another change from DSM-IV is the transition from text descriptions of neurocognitive disorders including traumatic brain NCD, Parkinson's NCD, Huntington's NCD, frontotemporal NCD, prion NCD, and HIV NCD to operational criteria. Alzheimer's NCD, vascular NCD, and substance use NCD in DSM-IV could be diagnosed with specific criteria. Over the past 20 years, much progress has led to many consensus efforts to develop operational criteria for these variants of NCD (9).

In summary, the Neurocognitive Disorders Workgroup has made every effort to ensure that the diagnostic criteria we have agreed on reflect this fast-emerging field. The workgroup is aware that the potential for instituting unnecessary diagnostic tests and unproven treatments for mild NCD is real. Only evidence-based practice of psychiatry can avert the misuse of this diagnosis—a truism for all psychiatry.

References

1. Ganguli M, Blacker D, Blazer DG, Grant I, Jeste DV, Paulsen JS, Petersen RC, Sachdev PS: Classification of neurocognitive disorders in DSM-5: a work in progress. Am J Geriatr Psychiatry 2011; 19:205–210
2. Morris JC: Revised criteria for mild cognitive impairment may compromise the diagnosis of Alzheimer disease dementia. Arch Neurol 2012; 69:700–708
3. Span P: Time to recognize mild cognitive disorder? New York Times, January 25, 2013. http://newoldage.blogs.nytimes.com/2013/01/25/time-to-recognize-mild-cognitive-disorder/
4. Petersen RC: Clinical practice: mild cognitive impairment. N Engl J Med 2011; 364:2227–2234
5. Fagan AM, Mintun MA, Mach RH, Lee SY, Dence CS, Shah AR, LaRossa GN, Spinner ML, Klunk WE, Mathis CA, DeKosky ST, Morris JC, Holtzman DM: Inverse relation between in vivo amyloid imaging load and cerebrospinal fluid $A\beta_{42}$ in humans. Ann Neurol 2006; 59:512–519
6. Klunk WE, Engler H, Nordberg A, Wang Y, Blomqvist G, Holt DP, Bergström M, Savitcheva I, Huang GF, Estrada S, Ausén B, Debnath ML, Barletta J, Price JC, Sandell J, Lopresti BJ, Wall A, Koivisto P, Antoni G, Mathis CA, Långström B: Imaging brain amyloid in Alzheimer's disease with Pittsburgh Compound-B. Ann Neurol 2004; 55:306–319
7. Shaw LM, Vanderstichele H, Knapik-Czajka M, Clark CM, Aisen PS, Petersen RC, Blennow K, Soares H, Simon A, Lewczuk P, Dean R, Siemers E, Potter W, Lee VM, Trojanowski JQ; Alzheimer's Disease Neuroimaging Initiative: Cerebrospinal fluid biomarker signature in Alzheimer's disease neuroimaging initiative subjects. Ann Neurol 2009; 65:403–413
8. Albert MS, DeKosky ST, Dickson D, Dubois B, Feldman HH, Fox NC, Gamst A, Holtzman DM, Jagust WJ, Petersen RC, Snyder PJ, Carrillo MC, Thies B, Phelps CH: The diagnosis of mild cognitive impairment due to Alzheimer's disease: recommendations from the National Institute on Aging-Alzheimer's Association workgroups on diagnostic guidelines for Alzheimer's disease. Alzheimers Dement 2011; 7:270–279
9. Rascovsky K, Hodges JR, Kipps CM, Johnson JK, Seeley WW, Mendez MF, Knopman D, Kertesz A, Mesulam M, Salmon DP, Galasko D, Chow TW, Decarli C, Hillis A, Josephs K, Kramer JH, Weintraub S, Grossman M, Gorno-Tempini ML, Miller BM: Diagnostic criteria for the behavioral variant of frontotemporal dementia (bvFTD): current limitations and future directions. Alzheimer Dis Assoc Disord 2007; 21:S14–S18

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