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DSM-5 and mental disorders in older individuals: an overview

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Abstract

About every 20 years, the American Psychiatric Association revises its official classification of mental disorders. The fifth revision of the Diagnostic and Statistical Manual of Mental Disorders (DSM-5) was published in 2013, exciting considerable commentary, debate and criticism. This article briefly describes the process that led to the DSM-5 and the main changes from the previous version (DSM-IV) that would be of interest to a geriatric psychiatrist. While there have been a number of changes in the areas of schizophrenia, bipolar disorder, depressive disorders and anxiety disorders, the majority of these changes are minor and unlikely to have major treatment implications. The classification of neurocognitive disorders has however seen a major revision and elaboration in comparison with DSM-IV, with the introduction of Mild and Major Neurocognitive Disorders, the latter equated with dementia. A common language is introduced for the criteria of the various etiological subtypes of neurocognitive disorders. All physicians treating patients with neurocognitive disorders should familiarize themselves with these criteria. Their use in research has the potential to harmonize the field.

Keywords

DSM-5; DSM-IV; classification of mental disorders; neurocognitive disorders; depressive disorders; schizophrenia; bipolar disorder; anxiety disorders; old age psychiatry; psychogeriatrics

The publication of the fifth edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM-5)[1] by the American Psychiatric Association (APA) in the spring of 2013 marked the end of a process that had spanned over a decade, with contributions from more than 1,500 experts across a host of disciplines. Since it was a much awaited revision of DSM-IV[2] published nearly two decades earlier, it has prompted much commentary, debate and criticism.[3-5] While the merits of the changes are open to debate, the authors elected to

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Declaration of Interest: PSS and DVJ were members of the neurocognitive disorders work group in the DSM-5 revision process and DVJ was President of the American Psychiatric Association at the time of the release of DSM-5.

take a pragmatic approach and examine how the document can best serve the practice of psychiatry. The focus in this article is on Geriatric Psychiatry, and the implications of the DSM-5 for the practicing geriatric psychiatrist.

The DSM-5 Process

Detailed descriptions of the development, and subsequent review and approval processes followed for the DSM-5 have been published previously.[6] In brief, the revision process began with a series of 13 international research conferences held between 2003 and 2008 in cooperation with the World Health Organization Division of Mental Health and Substance Abuse, with support from a 5 year National Institutes of Health cooperative agreement with the research component of the APA. The resulting monographs identified gaps in existing diagnostic criteria in light of scientific and clinical advances in psychiatric disorders. This provided the foundation on which members of the DSM-5 Task Force and Work Groups would begin to build their amendment proposals.[6] There followed a 5 year process of biannual in-person meetings and frequent teleconferences and electronic exchanges between members of individual work groups. Strict membership criteria were applied in determining the make-up of work groups, particularly in regards to funding and conflict of interest disclosures. Public comment was solicited on draft criteria posted on the DSM-5 website. The final criteria, designed to reflect the latest advances in scientific knowledge in this field, were reached by consensus of the members, with considerable input from expert advisers, and vetting by several over-arching DSM-5 panels, including a scientific review committee, a clinical and public health review committee, the task force comprising all work group chairs, and a summit body, with final approval from the APA Board of Trustees.

Structural and general changes

There are some overarching considerations for DSM-5 that warrant initial discussion before consideration of specific disorders. Since a revision of the International Classification of Diseases (ICD) was happening in parallel, from the 10th to the 11th (ICD-11) edition, harmonization with ICD-11 was intended from the beginning. The intention was to achieve greater coherence between the two pre-eminent classification systems used for mental disorders internationally and make DSM-5 a globally relevant document. Not surprisingly, the relevance of cultural and social contexts has received increased attention in the text accompanying each set of diagnostic criteria, reminding the clinician of the impact of these factors on illness expression and course, and patterns of help-seeking in patients.

High rates of diagnostic overlap in psychiatric disorders and the overutilization of the *not otherwise specified* (NOS) qualifier was seen as a weakness of previous editions of the DSM.[3] While it was explicitly stated in DSM-IV that: “there is no assumption that each category of mental disorder is a completely discrete entity with absolute boundaries….” (p. xxxi)[2], the disorders are in practice regarded as discrete categories. The authors of the DSM-5 recognized the dimensional nature of most mental phenomena and the resulting tension with the clinical imperative of categorical diagnoses. As a parallel development, a proposal of reorganizing mental disorders into clusters comprising internalizing (‘emotional and somatic’) and externalizing disorders, and neurodevelopmental, neurocognitive and psychotic clusters was put forward.[7] While this radical reframing of the disorders as clusters

was not accepted, the organizational structure of DSM-5 was modified to reflect this, with a new chapter order and adjacent placement of disorders that are likely to cluster with each other. Within each chapter, the DSM-5 has adopted a child to adult developmental and lifespan perspective. In recognition of the emerging understanding of pathophysiology, there has, for instance, been an attempt to acknowledge the shared genetic susceptibility between psychotic disorders and bipolar disorder in keeping with evidence in the area.[8] Body dysmorphic disorder and trichotillomania, previously classified under somatoform disorders and impulse control disorders respectively, find themselves reclassified in the obsessive-compulsive and related disorders chapter. Substance use disorders have been recognized as being externalizing disorders by being placed after the Disruptive, Impulse-Control and Conduct Disorders chapter. DSM-5 also encourages the use of specifiers, such as the 'anxious distress' specifier, in an attempt to meld a continuing categorical structure with the dimensional approach. Equally, specifiers are used to delineate variations in newly created spectra disorders, the most notable example being that of Autism Spectrum Disorder where using the specifiers "without intellectual impairment and without structural language impairment" would take the place of a diagnosis of Asperger's disorder. A similar change is the use of severity ratings in the case of the substance use disorders (representing abuse and dependence classifications).

A major amendment has been to move to a non-axial system for the documentation of diagnosis (formerly axes I, II and III), with distinct notations required for psychosocio-contextual factors of relevance and disability (axes IV and V). The global assessment of functioning (GAF) scale has been dropped in view of conceptual and psychometric issues in its use in clinical practice, and the WHO disability assessment schedule (WHODAS) is included instead in section III of the DSM-5 for use, if needed.

Disorder Specific Changes

Schizophrenia Spectrum and Other Psychotic Disorders

Age considerations in schizophrenia and related psychoses have received much attention in the last two decades. Viewed broadly, key questions revolve around the validity of a diagnosis of schizophrenia in older adults, and the possibility of an alternative pathophysiological process, such as neurodegeneration, underlying the illness phenotype. The latter line of thought has contributed in no small part to the commonly held belief that new onset non-cognitive, non-affective psychotic disorders in the elderly are rare. In the DSM III, new onset in a patient over the age of 45 years disallowed a diagnosis of schizophrenia, which was repealed in the ensuing DSM III-R where the diagnosis could be made with the addition of a "late-onset" specifier. The DSM-IV and now DSM-5 have done away with age-related criteria or specifiers.

Although the typical age of onset of schizophrenia is in early adulthood, a substantial minority of patients, 20% in some studies,[9] have onset of first episode after the age of 40 years. Debate about the significance of this later onset from a neurobiological perspective continues but DSM-5 side-steps this debate. It states instead that "late-onset cases can meet the diagnostic criteria for schizophrenia but it is not yet clear whether this is the same condition as schizophrenia diagnosed prior to mid-life" (DSM-5, p 103).[1] It refers to late-

onset as being after age 40 years, but somewhat confusingly contrasts late-onset with onset 'prior to mid-life' (i.e. before age 55 years), leaving a 15 year uncertain period. Geriatric psychiatrists are better guided on this issue by the review undertaken at a consensus conference of the International Late-onset Schizophrenia Group.[10] The authors concluded that late-onset schizophrenia (onset after age 40 years) appeared to bear a reasonably close resemblance to schizophrenia of earlier onset, whereas a very late-onset group (onset after age 60 years) was better classified as having a *schizophrenia-like* psychosis based on a convergence of clinical, epidemiological, neuroimaging and neuropsychological data, although there was no consensus on the age cut-offs for this distinction.

Depressive Disorders

Major Depressive Disorder—The separation of Unipolar from Bipolar Affective Disorders is one of the notable meta-structural revisions in DSM-5 and reflects the aforementioned desire for clustering of disorders based on known pathomechanisms. Whilst '*prima facie*' Depressive Disorder diagnostic revisions may not appear substantive, significant implications for clinical utility have been argued for.[11]

Major Depressive Disorder (MDD) remains a categorical diagnosis despite one of the lowest inter-rater reliability (κ=0.28) of all DSM-5 disorders.[12-13] Inclusion of the descriptor 'hopeless' alongside sadness and emptiness as subjective indicators of depressed mood (DSM-5, p160)[1] allows the diagnostic threshold to be crossed in the absence of subjectively depressed mood. However, the specificity of hopelessness as an indicator of a Major Depressive Episode (MDE) in the absence of depressed mood appears unclear. In the clinic, this revision serves to potentially broaden the diagnostic boundaries of MDEs in later life and potentially decreases diagnostic inter-rater reliability. Depression without sadness has been suggested to be more common in older adults[14] and a 'depletion syndrome' characterized by withdrawal, apathy and lack of vigor has been described as a manifestation of depression in the elderly[15]. DSM-5 criteria are therefore more likely to identify depression in the elderly.

A change that has attracted much comment and criticism is the rescinding of the 'bereavement exclusion criterion' from the diagnostic criteria of MDD, with charges of diagnostic expansionism being leveled.[16] Introduced in DSM-III to distinguish normative grief reactions from pathological depression, the criterion had evolved and in DSM-IV-TR[17] required a minimum 2-month duration, marked functional impairment or one additional 'depression-specific' symptom distinct from grief, such as morbid preoccupation with worthlessness, psychomotor retardation or psychotic features. Lack of evidence-based differentiation in the domains of symptom-profile, genetic diathesis/family history or treatment response between bereavement-related and other-adverse-event related depressive episodes was considered by the DSM-5 Depressive Disorders Work Group to reflect limited clinical discriminant validity of the bereavement exclusion criterion.[18-21] Whilst it has been shown that there is no age difference in the recurrence rates of bereavement-related depressive episodes,[20,22] the specific discriminant validity of the bereavement exclusion criterion in old age populations has not been determined.

Given the prevalence of bereavement in the old age population, vigilance for potential increases in the number of cases of major depression attributable to normative grief responses is warranted.[16] The change could possibly increase the heterogeneity of MDD in late life. A concern is that this may lead to an inappropriate increase in pharmacological therapy, with the potential for adverse effects in older individuals. A footnote in DSM-5 (p. 161)[1] describes features distinguishing grief from a MDE, and appeals for 'clinical judgement', but the world psychiatric community's response to this has so far been mixed.[23,24]

Persistent Complex Bereavement Disorder (PCBD) appears in Section 3, Conditions for Further Study, and is distinguished from a normative grief response by duration (persistence for at least 12 months), severity and intensity of grief-related phenomenon, resultant functional impairment and cultural incongruence[1]. Noted to be frequently comorbid with PTSD[1], inclusion of the disorder in Section 3 warrants consideration by the geriatric psychiatrist of the clinical phenotype in the older adult population.

Major Depressive Disorder Specifiers—Given the prevalence of the 'anxious' depressive phenotype in older patients,[25] the new "with anxious distress" specifier applicable to Depressive and Bipolar Disorders is likely to be used clinically. It may lead to a more robust assessment of anxiety phenomena in the depressed elderly, with therapeutic implications.

Another change is the introduction of the "with mixed features" specifier for both Depressive and Bipolar Disorders, intended to function as a 'diagnostic bridge' between the two affective poles. The change from the DSM-IV 'Mixed Episode' was driven by the concern that the diagnostic threshold for the latter was too restrictive and was therefore of low clinical utility and infrequently applied in clinical practice. It has been argued that this had the unintended consequence of an underestimation of suicide risk and inappropriate pharmacological treatment.[26] The shift to a 'with mixed features' specifier however requires that the primary pole be first identified and the presence of symptoms in the opposite pole be then acknowledged. This arguably implies greater symptom stability in mood disorders than is clinically present. Moreover, features such as distractibility, irritability, insomnia and indecisiveness are not included as mixed specifier indicators of 'with manic features', ostensibly because of their limited specificity for mixed depressive states, but this has been contentious.[27,28] For the geriatric psychiatrist, the mixed specifier may have significant utility as the 'polar mantle' of episodes is characteristically more stable in older patients.[29] The emergence of symptoms warranting the specifier in a patient would possibly signal destabilization and thus prompt a search for contributory medical or other etiological factors in the psychogeriatric population.

The psychotic features specifier has been uncoupled from the severity of depression determination. Since psychotic symptoms are more likely to occur in geriatric depression, this again has implications for the geriatric psychiatrist. The definition of melancholic mood quality as 'characterized by profound despondency, despair, and/or moroseness or…empty mood' (DSM-5, p. 186)[1] is noteworthy. DSM-5 includes the descriptor 'empty' when

elaborating mood quality in MDD, melancholia and grief, thereby limiting its discriminative diagnostic utility.

Persistent Depressive Disorder—The term Persistent Depressive Disorder (PDD) replaces Dysthymia, with the latter retained in parentheses. PDD however represents the consolidation of DSM-IV dysthymia and chronic MDD. Since the threshold of the dysthymic syndrome is lower than that of MDD, it is possible to have PDD with pure dysthymic syndrome, or with persistent major depressive episode, or with intermittent major depressive episodes with or without current episode. The terminology does present a challenge to all psychiatrists, including geriatric psychiatrists.[11] A significant proportion of older individuals have persistent depressive symptoms,[30] and aproportion of these are persistently high, the latter showing significant physical comorbidity and disability. The clinical situation should therefore be assessed to determine if the depressive symptoms are persistently high or increasing in severity in addition to their chronicity.[30]

Bipolar and Related Disorders

In addition to structural revision whereby the bipolar disorders have been separated from depressive disorders to reflect increasing conceptualization on a spectrum with Schizophrenia, there are several alterations to these conditions that have clinical relevance for geriatric psychiatry including an increase in ‘criterion A’ symptoms, alterations to a number of exclusion criteria and concerted efforts to operationalize sub-threshold bipolar syndromes.[31]

Mania and Hypomania, ‘Criterion A’—DSM-5 requires ‘abnormally and persistently increased goal-directed activity or energy’ as a core feature to meet diagnostic criteria for mania or hypomania (DSM-5, p. 124),[1] with evidence from the STEP-BD study having been used for this revision.[31] It is possible that this may represent an unintended increase in diagnostic threshold for older patients in whom the clinical expression of this phenotypic signal may be reduced in the presence of complex medical co-morbidity.

Revisions to Bipolar Disorder Exclusion Criterion—The DSM-IV exclusion of antidepressant-induced mood states from a diagnosis of bipolar disorder is not applicable in DSM-5. This reflects research evidence that unipolar depression with history of treatment-induced mania, bipolar I and bipolar II cluster together.[32] The text now states: “A full manic episode that emerges during antidepressant treatment (e.g., medication, electroconvulsive therapy) but persists at a fully syndromal level beyond the physiological effect of that treatment is sufficient evidence for a bipolar I diagnosis” (DSM-5, p. 145).[1] The same applies for bipolar II. This change has significant diagnostic and treatment implications, as it is likely to influence the use of mood stabilizers in these patients and have a bearing on long term management.

Bipolar Disorder Specifiers—Abolition of the DSM-IV ‘Mixed Episode’ has been discussed above under Depressive Disorders in relation to the ‘with mixed features’ specifier. Similarly the ‘with anxious distress’ specifier has been mentioned previously.

'Other Specified' and 'Unspecified' Bipolar and Related disorders—An attempt to diagnostically capture subsyndromal bipolar disorder states is reflected in the introduction in DSM-5 of the categories 'Other Specified' and 'Unspecified' Bipolar Disorders, effectively replacing Bipolar Disorder *NOS*. The 'Other specified' category includes subsyndromal hypomania not meeting duration or severity threshold, 'threshold hypomania' in the absence of depressive disorder history, and short-duration cyclothymia.

Suicidal behavior disorder

This disorder is included in Section III of DSM-5 as a 'condition for further study' (DSM-5, p. 801)[1]. It essentially refers to an individual who has made a suicidal attempt, with at least some intent to die, in the previous 24 months, with the act not being solely for a political or religious objective. The inclusion of suicidal behavior as a comorbid condition rather than a symptom has not been without controversy. The main arguments for this are that suicidal behavior is known to occur in a large array of psychiatric disorders, and sometimes in the absence of a mental disorder, its separate inclusion focuses the clinician's mind on its assessment especially when depression or borderline personality disorder are absent, it has antecedent and concurrent validators, and it predicts future suicidal behavior[33]. Many clinicians may however consider this to be the reification of a symptom as a disorder. Its inclusion in Section III suggests the need for further considered examination of the practical implications of the proposed change.

Suicidal behavior is of particular interest to a geriatric psychiatrist as suicide rates in older individuals are as high or higher than in young individuals.[34] In elderly suicides, psychiatric disorders are reportedly present in up to 90% cases,[35] suggesting that there is a proportion without a psychiatric illness that is still at high risk. Physical illness, functional impairment and stress life events are major contributory factors in this group.[36]

Anxiety disorders and related disorders

The DSM-IV anxiety disorders have undergone meta-structural revision in DSM-5. Obsessive-compulsive disorder (OCD) and related disorders, as well as post-traumatic stress disorder (PTSD) and other trauma and stressor-related disorders have been separated from anxiety disorders, given evidence that they are genotypically, neurobiologically and phenomenologically distinct.[37,38] However, they occupy contiguous chapters, in recognition of their phenotypic proximity. Of particular note to the practicing geriatric psychiatrist is the shift in taxonomy such that Hoarding Disorder is now a discrete diagnostic entity within the OCD and related disorders chapter.

Social Anxiety Disorder (formerly Social Phobia), Specific Phobia and Agoraphobia—Recognition that anxiety is excessive or unreasonable is no longer required for the diagnosis of agoraphobia, specific phobia and social anxiety disorder. The diagnostic threshold now relies upon clinical judgment as to whether the specific fear-anxiety construct is disproportionate. This may be a welcome, pragmatic revision for the practicing geriatric psychiatrist, given that the clinical phenotype of anxiety symptoms in older adults is frequently characterized by poor insight and particularly by misattribution of anxiety symptoms to medical etiology.[39] The statement that the symptoms typically last for 6

months will potentially assist in the diagnostic distinction from transient fears. Panic Disorder in DSM-5 has been uncoupled from Agoraphobia, resulting in two distinct diagnoses with independent criteria. When they co-occur both disorders would be diagnosed.

Adult Separation Anxiety Disorder—In DSM-5, the age-of-onset criterion for separation anxiety disorder, previously less than 18 years of age, has been removed, thereby endorsing onset of the disorder in adulthood including old age. This has followed the evaluation of pooled-evidence to suggest that the onset of this disorder is not exclusively in childhood and adolescence.[40,41] Whilst current evidence suggests that onset after age 60 occurs only in a small minority of cases,[42] the frequent occurrence of separation in later life does warrant the diagnostic distinction of pathological from non-pathological fear of separation.

Obsessive Compulsive and Related Disorders – Hoarding Disorder—Alterations to the OCD insight specifiers now allow specification of "absent insight/delusional" (DSM-5, p237),[1] thereby recognizing that the lack of insight does not make this one of the psychotic disorders. The inclusion of Hoarding Disorder (HD) as a distinct category is of importance to geriatric psychiatry. The drivers of hoarding are broader that the previous conceptualization as being solely compulsive.[12,13] When criteria for both OCD and HD are met, both diagnoses should be made. The presence of major neurocognitive disorder excludes HD, but HD can be diagnosed in the presence of mild neurocognitive disorder, which is worthy of further examination. The introduction of Hoarding Disorder allows for identification and treatment of a group that was previously undiagnosed unless hoarding occurred in the context of OCD, OCPD or anxiety disorder NOS. Further research is required to determine the most efficacious treatments for this disorder.[43]

Trauma- and Stressor-Related Disorders - Adjustment Disorders—Inclusion within Trauma- and Stressor-Related Disorders transitions the Adjustment Disorders from a residual to full-syndromal category status, harmonizes with proposed ICD-11 changes,[44] and attempts to redresses the poor delineation between normative adaptive stress responses in DSM-IV.[45] Reconceptualization does clarify the operational framework of the adjustment disorders. However, there will likely be limited clinical impact for the practicing geriatric psychiatrist.

Neurocognitive disorders

What was referred to as "Delirium, Dementia, and Amnestic and Other Cognitive Disorders" in DSM-IV has been characterized as "Neurocognitive Disorders" in DSM-5. Major changes have occurred in the descriptions of these disorders in what may be regarded as some of the most substantive changes in DSM-5. The term 'neurocognitive' rather than 'cognitive' is applied to this cluster to emphasize that neural substrates are disrupted in these disorders, a disruption that is generally recognizable from history, examination or investigations[46] and results in decline in cognitive function from a previous level of performance. Since the disturbance can occur in one or more cognitive domains, DSM-5

delineates six domains for the purpose of this characterization: complex attention, executive function, learning and memory, language, perceptual-motor and social cognition.

The neurocognitive disorders in DSM-5 comprise three syndromes: delirium, mild neurocognitive disorder (mild NCD) and major neurocognitive disorder (major NCD) or dementia. Once a syndromal diagnosis is made, criteria are presented to delineate etiological diagnoses such as Alzheimer's disease, cerebrovascular disease etc.

The criteria of *delirium* have not changed substantially. A change in terminology has occurred such that the reference to “disturbance of consciousness” in DSM-IV is now replaced by the requirement of “disturbance in level of awareness with reduced ability to direct, focus, sustain or shift attention”. The other criteria have simply been rearranged such that the duration criterion is at the end. Delirium is now subtyped into hyperactive, hypoactive and mixed subtypes.

A significant change is the introduction of *Mild* and *Major NCD*. The introduction of Major NCD as an alternative term to dementia was prompted by the fact that ‘dementia’ is often used synonymously with Alzheimer's disease,[47] and there is a reluctance to describe younger people with severe cognitive deficits due to, for instance, traumatic brain injury or HIV infection, as having dementia. The negative connotation of dementia also promotes a delay in diagnosis, and with a move toward early diagnosis, the terms Mild and Major NCD may be of assistance. However, it is expected that ‘dementia’ will continue to be used for the elderly and in many other clinical settings, but that Major NCD may be a more suitable diagnosis for many younger patients.

The criteria for Major NCD do have some differences from DSM-IV dementia: i) Major NCD requires significant decline in only one cognitive domain; ii) unlike DSM-IV dementia, impairment in memory is not essential for Major NCD; and iii) the functional threshold for diagnosing Major NCD is that cognitive deficits ‘interfere with independence in everyday activities’, in contrast with the DSM-IV requirement of ‘significantly interferes with work or social activities or relationships with others’. The determination of ‘significant’ cognitive decline is based both on subjective concern of an individual or a knowledgeable informant or a clinician, as well as the objective demonstration of substantial impairment in cognitive performance on an objective measure. The latter is ideally a formal neuropsychological assessment, but a brief “bedside” assessment by the clinician would suffice for this criterion. If a formal assessment is available, the performance typically falls 2 or more standard deviations (SD) below the normative mean (or below the 3rd percentile) on the test administered. It is expected that these changes will lead to a more rational and operational approach to the diagnosis of Major NCD or dementia.

The introduction of Mild NCD as a new category recognizes that the diagnosis of mild cognitive impairment (MCI) has become commonplace in clinical practice. Many patients with neurodegenerative disorders seek a diagnosis prior to the stage of dementia and many disorders cause only mild cognitive impairments but with significant clinical impact.[48] Mild NCD is not the same as pre-dementia as the diagnosis has no requirement for further decline, and not all individuals with Mild NCD show progressive decline, such as that due to

traumatic brain injury and substance/medication use etiologies, with some in fact reverting to normality.[49] Mild NCD has had a number of critics who argue that it medicalizes normality and might lead to misdiagnosis of the "worried well", leading to inappropriate investigations and treatments.[50] However, increasing utilization of the MCI diagnosis by physicians in clinical practice[48] supports its inclusion in the classification.

The DSM-5 criteria for Mild NCD differ from those for Major NCD by *severity* of the cognitive deficits and the consequent *functional impairment*. The cognitive decline in this case is stated to be 'modest', with the guideline that neuropsychological test performance in Mild NCD is in the range 1 to 2 SD below the normative mean, or between the 3rd and 16th percentiles. Formal neuropsychological testing is not mandated, and clinicians may rely on 'bedside' assessments and apply their 'clinical judgment'. There is an acknowledgement however, that formal assessment by a clinical neuropsychologist is the standard to aspire to given that cognitive deficits in Mild NCD are subtler than in Major NCD and may be more difficult to establish with 'bedside' testing. If serial assessments are available for any individual, they may more objectively document decline, but cautious interpretation is recommended owing to practice effects, variable test-retest reliability, and the dearth of normative data on cognitive decline.[51]

The 'functional' threshold differs between Major and Mild NCD in that the latter does not interfere with the capacity for independence in everyday activities. This does not mean that individuals with Mild NCD have no impairment, but they are able to overcome their deficits with extra effort and compensatory strategies. This criterion may be difficult to operationalize in practice as it open to the judgment of the clinician and relies on a knowledgeable informant, who may or may not offer an unbiased opinion. Major or Mild NCD cannot be newly diagnosed in the presence of delirium, although delirium may overlie either of these two disorders. Another exclusion is the presence of another mental disorder such as major depression or schizophrenia which can 'better explain' the cognitive deficits. Some commentators[52] have argued against this approach and presented the viewpoint that NCDs may be caused by mental disorders such as major depression, which should be regarded as etiological subtypes.

There have been a number of previous attempts to define mild neurocognitive disorders, with many criteria for MCI having been published. The DSM-5 criteria for Mild NCD are conceptually similar to the International Working Group (IWG) or the Key Symposium Criteria,[53] as well as the National Institute of Aging- Alzheimer's Association (NIA-AA) Criteria for MCI due to Alzheimer's disease.[54] The other commonly used criteria for MCI are the Mayo Criteria,[55] which correspond best to amnestic MCI, conceptually a precursor to AD, and are therefore narrower than the DSM-5 Mild NCD. Like the IWG criteria, the DSM-5 Mild NCD criteria can be fulfilled by decline in one or more cognitive domains without the presence of memory impairment. The DSM-5 does not explicitly describe the criteria for amnestic and non-amnestic subtypes of Mild NCD, although such subtyping is commonly used in research settings and is suggested in the IWG criteria.[53]

Etiological subtypes—Major and Mild NCD are subtyped according to etiology, with the clinical process being that the syndromal diagnosis is first made and then etiology

probed. The principal subtypes for which specific diagnostic criteria are included in DSM-5 are listed in Table 1. The criteria have different levels of certainty depending upon the nature of the evidence available. For the “big four”, i.e. Alzheimer's disease (AD), cerebrovascular disease (CVD), frontotemporal lobar degeneration (FTLD) and cortical Lewy body disease (LBD), ‘probable’ and ‘possible’ levels are presented, with the former requiring a higher level of certainty. DSM-5 is designed to be a clinical classification, and findings that are still in the research domain are not included in the criteria. This is true for some, but not all, biomarkers of disease. Biomarkers are, however, used in some cases to increase the level of certainty. Some criteria sets for dementing disorders stipulate neuropathological confirmation from autopsy or biopsy as being required for a ‘definite’ etiological diagnosis.[56,57] Considering that DSM-5 is a clinical classification, ‘definite’ diagnostic criteria are not presented. Moreover, generally accepted neuropathological criteria for many of the etiological subtypes are lacking.

In many cases, the cause of the neurocognitive disorder can be established with much certainty, such as in the case of Huntington's disease, traumatic brain injury, HIV/AIDS or stroke. Not uncommonly, especially in older individuals, multiple etiologies may be relevant, all of which should be recognized. DSM-5 stipulates that primacy or salience should be assigned to one or two. For example, Major NCD may be due to a contribution from both AD and CVD related pathology, in which case both can be diagnosed. Diagnostic criteria for most subtypes include the exclusionary criterion that the disturbance cannot be explained by another etiology. The requirement of this exclusionary criterion reflects the non-specificity of the clinical features. This supported the trend to develop biomarkers for the other disorders, which is increasingly influencing the research arena and to some extent the clinic. The presence of etiological mutations, such as in the amyloid precursor protein or the presenilin genes in early-onset AD, and expansion of the huntingtin gene with 36 or more repeats of the CAG trinucelotide for Huntington's disease, is of diagnostic salience. Neuroimaging is particularly important to determine vascular and frontotemporal degenerative etiology. Imaging may be supportive in AD, but its specificity is not considered high enough to be explicitly included in the diagnostic criteria. Other biomarkers, such as cerebrospinal fluid (CSF) levels of amyloid β42 (Aβ42) and phosphorylated tau (pTau) for AD diagnosis,[58] are still regarded to be in the research arena. While risk factors are sometimes considered in the determination of etiology, e.g. vascular risk factors such as hypertension, diabetes, obesity and the metabolic syndrome for vascular dementia, such factors are generally not exclusive to one etiology and should not be conflated with the underlying pathology. Risk factors are therefore not included in the diagnostic criteria for the etiological subtypes in DSM-5.

The DSM-5 is the first attempt to use the same terminology and structure for defining the various neurocognitive disorders. The work group had extensive discussions with experts from the respective fields such that there was harmony between the DSM criteria and those developed by other expert groups, such as the National Institute of Aging- Alzheimer's Association (NIA-AA),[54,59] the frontotemporal dementia expert group,[60,61] the consortium on DLB,[62] the VASCOG work group,[63] the Movement Disorder Study Task Force on Parkinson's Disease,[64] the AIDS Task Force of the American Academy of Neurology,[65] and

others. The use of these criteria by the various groups dealing with neurocognitive disorders has the potential to bring a much-needed harmony in this vast field.

Sleep-wake disorders

The DSM-5 chapter on sleep-wake disorders has undergone a number of changes from its DSM-IV counterpart, with the intention to facilitate the assessment of sleep-wake complaints by a general psychiatrist, reflect the advances in the field in the last 2 decades, and make it easier to decide when a referral to a sleep specialist is required. Ten disorders are described in this chapter. Primary and secondary insomnia have been lumped into one Insomnia Disorder. Narcolepsy has been separated from other forms of hypersomnolence because of the greater understanding of its biological basis. Two disorders of relevance of psychiatry – rapid eye movement (rem) sleep behavior disorder and restless legs syndrome – are listed as independent disorders with defined criteria. The breathing-related sleep disorder is subtyped into three disorders: obstructive sleep apnea/hypopnea, central sleep apnea and sleep-related hypoventilation. DSM-5 pays much attention to the interaction between sleep-wake disorders and mental disorders, emphasizing a bidirectional relationship. Sleep-wake disorders are of particular interest to geriatric psychiatrists as it is estimated that nearly 50% of older adults have difficulty initiating or maintaining sleep, with significant impact on quality of life.[66] With age, the prevalence of insomnia, sleep-related breathing disorder, periodic leg movements in sleep and restless legs syndrome increases.[66] The relationship between sleep disorders and cognition is also of much interest.[67] Sleep disorders may be an early manifestation of dementing disorders, in particular dementia with Lewy bodies and Alzheimer's disease.[67]

Online assessment measures

In a further effort to promote a dimensional approach to mental disorder, DSM-5 encourages the clinician to use a number of ‘emerging’ measures to assess and monitor patients which are provided online.[68] These include cross-cutting symptom measures that are important across diagnoses, severity measures that are disorder-specific and disability measures such as World Health Organization Disability Assessment Schedule, Version 2.0 (WHODAS 2.0). Geriatric psychiatrists will find many of these measures useful in their clinical practice as they help in performing a comprehensive mental status assessment by drawing attention to additional symptoms that might not have the initial focus, and providing a measure of disability that is independent of the psychiatric disorder. The WHODAS assesses the patient's ability in six domains and can be administered by the patient or an informant. While these measures are designed for all adutls and do not focus specifically on the elderly, over time it will become clearer what the appropriate applications are on older patients.

Conclusion

There are many changes in DSM-5 that a geriatric psychiatrist should be familiar with. While the changes in the majority of the disorders are minor, neurocognitive disorders have seen a major reorganization and elaboration, and this chapter should receive particular attention from those treating older patients. Changes to MDD such as the inclusion of hopelessness as a subjective indicator and the rescinding of bereavement exclusion, the

introduction of Hoarding Disorder, and major revision of the classification of neurocognitive disorders, with a redefinition of dementia and the introduction of Major and Mild NCDs will significant bearing in the clinic. While there is unlikely to be full agreement with the changes, DSM-5 should be viewed as a living document that will be modified with time as better evidence becomes available.

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Table 1

Etiological subtypes of major (dementia) and mild neurocognitive disorders with diagnostic criteria in DSM-5

Alzheimer's disease
Frontotemporal lobar degeneration
Cortical Lewy body disease
Vascular disease
Traumatic brain injury
Substance/medication use
HIV infection
Prion disease
Parkinson's disease
Huntington's disease
Another medical condition
Multiple etiologies
Unspecified