Innovations and changes in the ICD-11 classification of mental, behavioural and neurodevelopmental disorders

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Following approval of the ICD-11 by the World Health Assembly in May 2019, World Health Organization (WHO) member states will transition from the ICD-10 to the ICD-11, with reporting of health statistics based on the new system to begin on January 1, 2022. The WHO Department of Mental Health and Substance Abuse will publish Clinical Descriptions and Diagnostic Guidelines (CDDG) for ICD-11 Mental, Behavioural and Neurodevelopmental Disorders following ICD-11's approval. The development of the ICD-11 CDDG over the past decade, based on the principles of clinical utility and global applicability, has been the most broadly international, multilingual, multidisciplinary and participative revision process ever implemented for a classification of mental disorders. Innovations in the ICD-11 include the provision of consistent and systematically characterized information, the adoption of a lifespan approach, and culture-related guidance for each disorder. Dimensional approaches have been incorporated into the classification, particularly for personality disorders and primary psychotic disorders, in ways that are consistent with current evidence, are more compatible with recovery-based approaches, eliminate artificial comorbidity, and more effectively capture changes over time. Here we describe major changes to the structure of the ICD-11 classification of mental disorders as compared to the ICD-10, and the development of two new ICD-11 chapters relevant to mental health practice. We illustrate a set of new categories that have been added to the ICD-11 and present the rationale for their inclusion. Finally, we provide a description of the important changes that have been made in each ICD-11 disorder grouping. This information is intended to be useful for both clinicians and researchers in orienting themselves to the ICD-11 and in preparing for implementation in their own professional contexts.

Key words: International Classification of Diseases, ICD-11, diagnosis, mental disorders, clinical utility, dimensional approaches, culture-related guidance

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In June 2018, the World Health Organization (WHO) released a pre-final version of the 11th revision of the International Classification of Diseases and Related Health Problems (ICD-11) for mortality and morbidity statistics to its 194 member states, for review and preparation for implementation[1]. The World Health Assembly, comprising the ministers of health of all member states, is expected to approve the ICD-11 at its next meeting, in May 2019. Following approval, member states will begin a process of transitioning from the ICD-10 to the ICD-11, with reporting of health statistics to the WHO using the ICD-11 to begin on January 1, 2022[2].

The WHO Department of Mental Health and Substance Abuse has been responsible for coordinating the development of four ICD-11 chapters: mental, behavioural and neurodevelopmental disorders; sleep-wake disorders; diseases of the nervous system; and conditions related to sexual health (jointly with the WHO Department of Reproductive Health and Research).

The mental disorders chapter of the ICD-10, the current version of the ICD, is by far the most widely used classification of mental disorders around the world[3]. During the development of the ICD-10, the WHO Department of Mental Health and Substance Abuse considered that different versions of the

classification had to be produced in order to meet the needs of its various users. The version of the ICD-10 for statistical reporting contains short glossary-like definitions for each disorder category, but this was considered to be insufficient for use by mental health professionals in clinical settings[4].

For mental health professionals, the Department developed the Clinical Descriptions and Diagnostic Guidelines (CDDG) for ICD-10 Mental and Behavioural Disorders[4], informally known as the "blue book", intended for general clinical, educational and service use. For each disorder, a description of the main clinical and associated features was provided, followed by more operationalized diagnostic guidelines that were designed to assist mental health clinicians in making a confident diagnosis. Information from a recent survey[5] suggests that clinicians regularly use the material in the CDDG and often review it systematically when making an initial diagnosis, which is counter to the widespread belief that clinicians only use the classification for the purpose of obtaining diagnostic codes for administrative and billing purposes. The Department will publish an equivalent CDDG version of ICD-11 as soon as possible following approval of the overall system by the World Health Assembly.

More than a decade of intensive work has gone into the development of the ICD-11 CDDG. It has involved hundreds of content experts as members of Advisory and Working Groups and as consultants, as well as an extensive collaboration with WHO member states, funding agencies, and professional and scientific societies. The development of the ICD-11 CDDG has been the most global, multilingual, multidisciplinary and participative revision process ever implemented for a classification of mental disorders.

GENERATING THE ICD-11 CDDG: PROCESS AND PRIORITIES

We have previously described the importance of clinical utility as an organizing principle in developing the ICD-11 CDDG[6,7]. Health classifications represent the interface between health encounters and health information. A system that does not provide clinically useful information at the level of the health encounter will not be faithfully implemented by clinicians and therefore cannot provide a valid basis for summary health encounter data used for decision making at the health system, national and global level.

Clinical utility was, therefore, strongly emphasized in the instructions provided to a series of Working Groups, generally organized by disorder grouping, appointed by the WHO Department of Mental Health and Substance Abuse to make recommendations regarding the structure and content of the ICD-11 CDDG.

Of course, in addition to being clinically useful and globally applicable, the ICD-11 must be scientifically valid. Accordingly, Working Groups were also asked to review the available scientific evidence relevant to their areas of work as a basis for developing their proposals for ICD-11.

The importance of global applicability[6] was also strongly emphasized to Working Groups. All groups included representatives from all WHO global regions – Africa, the Americas, Europe, Eastern Mediterranean, Southeast Asia, and Western Pacific – and a substantial proportion of individuals from low- and middle-income countries, which account for more than 80% of the world's population[8].

A shortcoming of the ICD-10 CDDG was the lack of consistency in the material provided across disorder groupings[9]. For the ICD-11 CDDG, Working Groups were asked to deliver their recommendations as "content forms", including consistent and systematic information for each disorder that provided the basis for the diagnostic guidelines.

We have previously published a detailed description of the work process and the structure of the ICD-11 diagnostic guidelines[9]. The development of the ICD-11 CDDG occurred during a period that overlapped substantially with the production of the DSM-5 by the American Psychiatric Association, and many ICD-11 Working Groups included overlapping membership with corresponding groups working on the DSM-5. ICD-11 Working Groups were asked to consider the clinical utility and global applicability of material being developed for the DSM-5. A goal was to minimize random or arbitrary differences between the ICD-11 and the DSM-5, although justified conceptual differences were permitted.

INNOVATIONS IN THE ICD-11 CDDG

A particularly important feature of the ICD-11 CDDG is their approach to describing the essential features of each disorder, which represent those symptoms or characteristics that a clinician could reasonably expect to find in all cases of the disorder. While the lists of essential features in the guidelines superficially resemble diagnostic criteria, arbitrary cutoffs and precise requirements related to symptom counts and duration are generally avoided, unless these have been empirically established across countries and cultures or there is another compelling reason to include them.

This approach is intended to conform to the way clinicians actually make diagnoses, with the flexible exercise of clinical judgment, and to increase clinical utility by allowing for cultural variations in presentation as well as contextual and health-system factors that may affect diagnostic practice. This flexible approach is consistent with results of surveys of psychiatrists and psychologists undertaken early in the ICD-11 development process regarding the desirable characteristics of a mental disorders classification system[3,10]. Field studies in clinical settings in 13 countries have confirmed that clinicians consider the clinical utility of this approach to be high[11]. Importantly, the diagnostic reliability of the ICD-11 guidelines appears to be at least as high as that obtained using a strict criteria-based approach[12].

A number of other innovations in the ICD-11 CDDG were also introduced by means of the template provided to Working Groups for making their recommendations (that is, the "con-

tent form"). As a part of the standardization of information provided in the guidelines, attention was devoted for each disorder to the systematic characterization of the boundary with normal variation and to the expansion of the information provided on boundaries with other disorders (differential diagnosis).

The lifespan approach adopted for the ICD-11 meant that the separate grouping of behavioural and emotional disorders with onset usually occurring in childhood and adolescence was eliminated, and these disorders distributed to other groupings with which they share symptoms. For example, separation anxiety disorder was moved to the anxiety and fear-related disorders grouping. Moreover, the ICD-11 CDDG provide information for each disorder and/or grouping where data were available describing variations in the presentation of the disorder among children and adolescents as well as among older adults.

Culture-related information was systematically incorporated based on a review of the literature on cultural influences on psychopathology and its expression for each ICD-11 diagnostic grouping as well as a detailed review of culture-related material in the ICD-10 CDDG and the DSM-5. The cultural guidance for panic disorder is provided in Table 1 as an example.

Another major innovation in the ICD-11 classification has been the incorporation of dimensional approaches within the context of an explicitly categorical system with specific taxonomic constraints. This effort was stimulated by the evidence that most mental disorders can be best described along a number of interacting symptom dimensions rather than as discrete categories[13-15], and has been facilitated by innovations in the coding structure for the ICD-11. The dimensional potential of the ICD-11 is most clearly realized in the classification of personality disorders[16,17].

For non-specialist settings, the dimensional rating of severity for ICD-11 personality disorders offers greater simplicity and clinical utility than the ICD-10 classification of specific personality disorders, improved differentiation of patients who need complex as compared to simpler treatments, and a better mechanism for tracking changes over time. In more specialized settings, the constellation of individual personality traits can inform specific intervention strategies. The dimensional system eliminates both the artificial comorbidity of personality disorders and the unspecified personality disorder diagnoses, as well as providing a basis for research into underlying dimensions and interventions across various personality disorder manifestations.

A set of dimensional qualifiers has also been introduced to describe the symptomatic manifestations of schizophrenia and other primary psychotic disorders[18]. Rather than focusing on diagnostic subtypes, the dimensional classification focuses on relevant aspects of the current clinical presentation in ways that are much more consistent with recovery-based psychiatric rehabilitation approaches.

The dimensional approaches to personality disorders and symptomatic manifestations of primary psychotic disorders are described in more detail in the respective sections later in this paper.

Table 1 Cultural considerations for panic disorder

- The symptom presentation of panic attacks may vary across cultures, influenced by cultural attributions about their origin or pathophysiology. For example, individuals of Cambodian origin may emphasize panic symptoms attributed to dysregulation of *khyâl*, a wind-like substance in traditional Cambodian ethnophysiology (e.g., dizziness, tinnitus, neck soreness).
- There are several notable cultural concepts of distress related to panic disorder, which link panic, fear, or anxiety to etiological attributions regarding specific social and environmental influences. Examples include attributions related to interpersonal conflict (e.g., *ataque de nervios* among Latin American people), exertion or orthostasis (*khyâl cap* among Cambodians), and atmospheric wind (*trúng gió* among Vietnamese individuals). These cultural labels may be applied to symptom presentations other than panic (e.g., anger paroxysms, in the case of *ataque de nervios*) but they often constitute panic episodes or presentations with partial phenomenological overlap with panic attacks.
- Clarifying cultural attributions and the context of the experience of symptoms can inform whether panic attacks should be considered expected or unexpected, as would be the case in panic disorder. For example, panic attacks may involve specific foci of apprehension that are better explained by another disorder (e.g., social situations in social anxiety disorder). Moreover, the cultural linkage of the apprehension focus with specific exposures (e.g., wind or cold and *trúng gió* panic attacks) may suggest that acute anxiety is expected when considered within the individual's cultural framework.

ICD-11 FIELD STUDIES

The ICD-11 field studies program also represents an area of major innovation. This program of work has included the use of novel methodologies for studying the clinical utility of the draft diagnostic guidelines, including their accuracy and consistency of application by clinicians as compared to ICD-10 as well as the specific elements responsible for any observed confusion[19]. A key strength of the research program has been that most studies have been conducted in a time frame allowing their results to provide a basis for revision of the guidelines to address any observed weaknesses[20].

Global participation has also been a defining characteristic of the ICD-11 CDDG field studies program. The Global Clinical Practice Network (GCPN) was established to allow mental health and primary care professionals from all over the world to participate directly in the development of the ICD-11 CDDG through Internet-based field studies.

Over time, the GCPN has expanded to include nearly 15,000 clinicians from 155 countries. All WHO global regions are represented in proportions that largely track the availability of mental health professionals by region, with the largest proportions coming from Asia, Europe and the Americas (approximately equally divided between the US and Canada on the one hand and Latin America on the other). More than half of GCPN

members are physicians, predominantly psychiatrists, and 30% are psychologists.

Approximately a dozen GCPN studies have been completed to date, most focusing on comparisons of the proposed ICD-11 diagnostic guidelines with ICD-10 guidelines in terms of accuracy and consistency of clinicians' diagnostic formulations, using standardized case material manipulated to test key differences[19,21]. Other studies have examined scaling for diagnostic qualifiers[22] and how clinicians actually use classifications[5]. GCPN studies have been conducted in Chinese, French, Japanese, Russian and Spanish, in addition to English, and have included an examination of results by region and language to identify potential difficulties in global or cultural applicability as well as problems in translation.

Clinic-based studies have also been conducted through a network of international field study centers to evaluate the clinical utility and usability of the proposed ICD-11 diagnostic guidelines in natural conditions, in the settings in which they are intended to be used[11]. These studies also evaluated the reliability of diagnoses that account for the greatest proportion of disease burden and mental health services utilization[12]. International field studies were located in 14 countries across all WHO global regions, and patient interviews for the studies were conducted in the local language of each country.

OVERALL STRUCTURE OF THE ICD-11 CHAPTER ON MENTAL, BEHAVIOURAL AND NEURODEVELOPMENTAL DISORDERS

In the ICD-10, the number of groupings of disorders was artificially constrained by the decimal coding system used in the classification, such that it was only possible to have a maximum of ten major groupings of disorders within the chapter on mental and behavioural disorders. As a result, diagnostic groupings were created that were not based on clinical utility or scientific evidence (e.g., anxiety disorders being included as part of the heterogeneous grouping of neurotic, stress-related, and somatoform disorders). ICD-11's use of a flexible alphanumeric coding structure allowed for a much larger number of groupings, making it possible to develop diagnostic groupings based more closely on scientific evidence and the needs of clinical practice.

In order to provide data to assist in developing an organizational structure that would be more clinically useful, two formative field studies were conducted[23,24] to examine the conceptualizations held by mental health professionals around the world regarding the relationships among mental disorders. These data informed decisions about the optimal structure of the classification. The ICD-11 organizational structure was also influenced by efforts by the WHO and the American Psychiatric Association to harmonize the overall structure of the ICD-11 chapter on mental and behavioural disorders with the structure of the DSM-5.

The organization of the ICD-10 chapter on mental and behavioural disorders largely reflected the chapter organization originally used in Kraepelin's Textbook of Psychiatry, which began with organic disorders, followed by psychoses, neurotic disorders, and personality disorders[25]. Principles guiding the ICD-11 organization included trying to order the diagnostic groupings following a developmental perspective (hence, neurodevelopmental disorders appear first and neurocognitive disorders last in the classification) and grouping disorders together based on putative shared etiological and pathophysiological factors (e.g., disorders specifically associated with stress) as well as shared phenomenology (e.g., dissociative disorders). Table 2 provides a listing of the diagnostic groupings in the ICD-11 chapter on mental, behavioural and neurodevelopmental disorders.

The classification of sleep disorders in the ICD-10 relied on the now obsolete separation between organic and non-organic disorders, resulting in the "non-organic" sleep disorders being included in the chapter on mental and behavioural disorders of the ICD-10, and the "organic" sleep disorders being included in other chapters (i.e., diseases of the nervous system, diseases of the respiratory system, and endocrine, nutritional and metabolic disorders). In ICD-11, a separate chapter has been created for sleep-wake disorders that encompasses all relevant sleep-related diagnoses.

Table 2 Disorder groupings in the ICD-11 chapter on mental, behavioural and neurodevelopmental disorders

Neurodevelopmental disorders
Schizophrenia and other primary psychotic disorders
Catatonia
Mood disorders
Anxiety and fear-related disorders
Obsessive-compulsive and related disorders
Disorders specifically associated with stress
Dissociative disorders
Feeding and eating disorders
Elimination disorders
Disorders of bodily distress and bodily experience
Disorders due to substance use and addictive behaviours
Impulse control disorders
Disruptive behaviour and dissocial disorders
Personality disorders
Paraphilic disorders
Factitious disorders
Neurocognitive disorders
Mental and behavioural disorders associated with pregnancy, childbirth and the puerperium
Psychological and behavioural factors affecting disorders or diseases classified elsewhere
Secondary mental or behavioural syndromes associated with disorders or diseases classified elsewhere

The ICD-10 also embodied a dichotomy between organic and non-organic in the realm of sexual dysfunctions, with "non-organic" sexual dysfunctions included in the chapter on mental and behavioural disorders, and "organic" sexual dysfunctions for the most part listed in the chapter on diseases of the genitourinary system. A new integrated chapter for conditions related to sexual health has been added to the ICD-11 to house a unified classification of sexual dysfunctions and sexual pain disorders[26] as well as changes in male and female anatomy. Moreover, ICD-10 gender identity disorders have been renamed as "gender incongruence" in the ICD-11 and moved from the mental disorders chapter to the new sexual health chapter[26], meaning that a transgender identity is no longer to be considered a mental disorder. Gender incongruence is not proposed for elimination in the ICD-11 because in many countries access to relevant health services is contingent on a qualifying diagnosis. The ICD-11 guidelines explicitly state that gender variant behaviour and preferences alone are not sufficient for making a diagnosis.

NEW MENTAL, BEHAVIOURAL AND NEURODEVELOPMENTAL DISORDERS IN THE ICD-11

Based on a review of the available evidence on scientific validity, and a consideration of clinical utility and global applicability, a number of new disorders have been added to the ICD-11 chapter on mental, behavioural and neurodevelopmental disorders. A description of these disorders as defined in the ICD-11 diagnostic guidelines and the rationale for their inclusion are provided below.

Catatonia

In the ICD-10, catatonia was included as one of the subtypes of schizophrenia (i.e., catatonic schizophrenia) and as one of the organic disorders (i.e., organic catatonic disorder). In recognition of the fact that the syndrome of catatonia can occur in association with a variety of mental disorders[27], a new diagnostic grouping for catatonia (at the same hierarchical level as mood disorders, anxiety and fear-related disorders, etc.) has been added in the ICD-11.

Catatonia is characterized by the occurrence of several symptoms such as stupor, catalepsy, waxy flexibility, mutism, negativism, posturing, mannerisms, stereotypies, psychomotor agitation, grimacing, echolalia and echopraxia. Three conditions are included in the new diagnostic grouping: a) catatonia associated with another mental disorder (such as a mood disorder, schizophrenia or other primary psychotic disorder, or autism spectrum disorder); b) catatonia induced by psychoactive substances, including medications (e.g., antipsychotic medications, amphetamines, phencyclidine); and c) secondary catatonia (i.e., caused by a medical condition, such as diabetic ketoacidosis, hypercalcemia, hepatic encephalopathy, homocystinuria, neoplasm, head trauma, cerebrovascular disease, or encephalitis).

Bipolar type II disorder

The DSM-IV introduced two types of bipolar disorder. Bipolar type I disorder applies to presentations characterized by at least one manic episode, whereas bipolar type II disorder requires at least one hypomanic episode plus at least one major depressive episode, in the absence of a history of manic episodes. Evidence supporting the validity of the distinction between these two types includes differences in antidepressant monotherapy response[28], neurocognitive measures[28,29], genetic effects[28,30], and neuroimaging findings[28,31,32].

Given this evidence, and the clinical utility of differentiating between these two types[33], bipolar disorder in ICD-11 has also been subdivided into type I and type II bipolar disorder.

Body dysmorphic disorder

Individuals with body dysmorphic disorder are persistently preoccupied with one or more defects or flaws in their bodily appearance that are either unnoticeable or only slightly noticeable to others[34]. The preoccupation is accompanied by repetitive and excessive behaviours, including repeated examination of the appearance or severity of the perceived defect or flaw, excessive attempts to camouflage or alter the perceived defect, or marked avoidance of social situations or triggers that increase distress about the perceived defect or flaw.

Originally called "dysmorphophobia", this condition was first included in the DSM-III-R. It appeared in the ICD-10 as an embedded but incongruous inclusion term under hypochondriasis, but clinicians were instructed to diagnose it as delusional disorder in cases in which associated beliefs were considered delusional. This created a potential for the same disorder to be assigned different diagnoses without recognizing the full spectrum of severity of the disorder, which can include beliefs that appear delusional due to the degree of conviction or fixity with which they are held.

In recognition of its distinct symptomatology, prevalence in the general population and similarities to obsessive-compulsive and related disorders (OCRD), body dysmorphic disorder has been included in this latter grouping in the ICD-11[35].

Olfactory reference disorder

This condition is characterized by a persistent preoccupation with the belief that one is emitting a perceived foul or offensive body odour or breath, that is either unnoticeable or only slightly noticeable to others[34].

In response to their preoccupation, individuals engage in repetitive and excessive behaviours such as repeatedly checking

for body odour or checking the perceived source of the smell; repeatedly seeking reassurance; excessive attempts to camouflage, alter or prevent the perceived odour; or marked avoidance of social situations or triggers that increase distress about the perceived foul or offensive odour. Affected individuals typically fear or are convinced that others noticing the smell will reject or humiliate them[36].

Olfactory reference disorder is included in the ICD-11 OCRD grouping, as it shares phenomenological similarities with other disorders in this grouping with respect to the presence of persistent intrusive preoccupations and associated repetitive behaviours[35].

Hoarding disorder

Hoarding disorder is characterized by the accumulation of possessions, due to their excessive acquisition or to difficulty discarding them, regardless of their actual value[35,37]. Excessive acquisition is characterized by repetitive urges or behaviours related to amassing or buying items. Difficulty discarding is characterized by a perceived need to save items and a distress associated with discarding them. The accumulation of possessions results in living spaces becoming cluttered to the point that their use or safety is compromised.

Although hoarding behaviours may be exhibited as a part of a broad range of mental and behavioural disorders and other conditions – including obsessive-compulsive disorder, depressive disorders, schizophrenia, dementia, autism spectrum disorders and Prader-Willi syndrome – there is sufficient evidence supporting hoarding disorder as a separate and unique disorder[38].

Individuals affected by hoarding disorder are underrecognized and undertreated, which argues from a public health perspective for its inclusion in the ICD-11[39].

Excoriation disorder

A new diagnostic subgrouping, body-focused repetitive behaviour disorders, has been added to the OCRD grouping. It includes trichotillomania (which was included in the grouping of habit and impulse disorders in ICD-10) and a new condition, excoriation disorder (also known as skin-picking disorder).

Excoriation disorder is characterized by recurrent picking of one's own skin, leading to skin lesions, accompanied by unsuccessful attempts to decrease or stop the behaviour. The skin picking must be severe enough to result in significant distress or impairment in functioning. Excoriation disorder (and trichotillomania) are distinct from other OCRDs in that the behaviour is rarely preceded by cognitive phenomena such as intrusive thoughts, obsessions or preoccupations, but instead may be preceded by sensory experiences.

Their inclusion in the OCRD grouping is based on shared phenomenology, patterns of familial aggregation, and putative etiological mechanisms with other disorders in this grouping[35,40].

Complex post-traumatic stress disorder

Complex post-traumatic stress disorder (complex PTSD)[41] most typically follows severe stressors of a prolonged nature, or multiple or repeated adverse events from which escape is difficult or impossible, such as torture, slavery, genocide campaigns, prolonged domestic violence, or repeated childhood sexual or physical abuse.

The symptom profile is marked by the three core features of PTSD (i.e., re-experiencing the traumatic event or events in the present in the form of vivid intrusive memories, flashbacks or nightmares; avoidance of thoughts and memories of the event or activities, situations or people reminiscent of the event; persistent perceptions of heightened current threat), which are accompanied by additional persistent, pervasive and enduring disturbances in affect regulation, self-concept and relational functioning.

The addition of complex PTSD to the ICD-11 is justified on the basis of the evidence that individuals with the disorder have a poorer prognosis and benefit from different treatments as compared to individuals with PTSD[42]. Complex PTSD replaces the overlapping ICD-10 category of enduring personality change after catastrophic experience[41].

Prolonged grief disorder

Prolonged grief disorder describes abnormally persistent and disabling responses to bereavement[41]. Following the death of a partner, parent, child or other person close to the bereaved, there is a persistent and pervasive grief response characterized by longing for the deceased or persistent preoccupation with the deceased, accompanied by intense emotional pain. Symptoms may include sadness, guilt, anger, denial, blame, difficulty accepting the death, feeling that the individual has lost a part of one's self, an inability to experience positive mood, emotional numbness, and difficulty in engaging with social or other activities. The grief response must persist for an atypically long period of time following the loss (more than six months) and clearly exceed expected social, cultural or religious norms for the individual's culture and context.

Although most people report at least partial remission from the pain of acute grief by around six months following bereavement, those who continue experiencing severe grief reactions are more likely to experience significant impairment in their functioning. The inclusion of prolonged grief disorder in the ICD-11 is a response to the increasing evidence of a distinct and debilitating condition that is not adequately described by current ICD-10 diagnoses[43]. Its inclusion and differentiation from culturally normative bereavement and depressive episode is important, because of the different treatment selection implications and prognoses of these latter disorders[44].

Binge eating disorder

Binge eating disorder is characterized by frequent, recurrent episodes of binge eating (e.g., once a week or more over a period of several months). A binge eating episode is a distinct period of time during which the individual experiences a subjective loss of control over eating, eats notably more or differently than usual, and feels unable to stop eating or limit the type or amount of food eaten.

Binge eating is experienced as very distressing and is often accompanied by negative emotions such as guilt or disgust. However, unlike in bulimia nervosa, binge eating episodes are not regularly followed by inappropriate compensatory behaviours aimed at preventing weight gain (e.g., self-induced vomiting, misuse of laxatives or enemas, strenuous exercise). Although binge eating disorder is often associated with weight gain and obesity, these features are not a requirement and the disorder can be present in normal weight individuals.

The addition of binge eating disorder in the ICD-11 is based on extensive research that has emerged during the last 20 years supporting its validity and clinical utility[45,46]. Individuals who report episodes of binge eating without inappropriate compensatory behaviours represent the most common group among those who receive ICD-10 diagnoses of other specified or unspecified eating disorder, so that it is expected that the inclusion of binge eating disorder will reduce these diagnoses[47].

Avoidant/restrictive food intake disorder

Avoidant/restrictive food intake disorder (ARFID) is characterized by abnormal eating or feeding behaviours that result in the intake of an insufficient quantity or variety of food to meet adequate energy or nutritional requirements. This results in significant weight loss, failure to gain weight as expected in childhood or pregnancy, clinically significant nutritional deficiencies, dependence on oral nutritional supplements or tube feeding, or otherwise negatively affects the health of the individual or results in significant functional impairment.

ARFID is distinguished from anorexia nervosa by the absence of concerns about body weight or shape. Its inclusion in the ICD-11 can be considered to be an expansion of the ICD-10 category "feeding disorder of infancy and childhood", and is likely to improve clinical utility across the lifespan (i.e., unlike its ICD-10 counterpart, ARFID applies to children, adolescents and adults) as well as maintaining consistency with DSM-5[45,47].

Body integrity dysphoria

Body integrity dysphoria is a rare disorder characterized by the persistent desire to have a specific physical disability (e.g., amputation, paraplegia, blindness, deafness) beginning in childhood or early adolescence[48]. The desire can be manifested in a number of ways, including fantasizing about having the desired physical disability, engaging in "pretending" behaviour (e.g., spending hours in a wheelchair or using leg braces to simulate having leg weakness), and spending time searching for ways to achieve the desired disability.

The preoccupation with the desire to have the physical disability (including time spent pretending) significantly interferes with productivity, leisure activities, or social functioning (e.g., the person is unwilling to have close relationships because it would make it difficult to pretend). Moreover, for a significant minority of individuals with this desire, their preoccupation goes beyond fantasy, and they pursue actualization of the desire through surgical means (i.e., by procuring an elective amputation of an otherwise healthy limb) or by self-damaging a limb to a degree in which amputation is the only therapeutic option (e.g., freezing a limb in dry ice).

Gaming disorder

As online gaming has greatly increased in popularity in recent years, problems have been observed related to excessive involvement in gaming. Gaming disorder has been included in a newly added diagnostic grouping called "disorders due to addictive behaviours" (which also contains gambling disorder) in response to global concerns about the impact of problematic gaming, especially the online form[49].

Gaming disorder is characterized by a pattern of persistent or recurrent Internet-based or offline gaming behaviour ("digital gaming" or "video-gaming") that is manifested by impaired control over the behaviour (e.g., inability to limit the amount of time spent gaming), giving increasing priority to gaming to the extent that it takes precedence over other life interests and daily activities; and continuing or escalating gaming despite its negative consequences (e.g., being repeatedly fired from jobs because of excessive absences due to gaming). It is differentiated from non-pathological gaming behaviour by the clinically significant distress or impairment in functioning it produces.

Compulsive sexual behaviour disorder

Compulsive sexual behaviour disorder is characterized by a persistent pattern of failure to control intense repetitive sexual impulses or urges, resulting in repetitive sexual behaviour over an extended period (e.g., six months or more) that causes marked distress or impairment in personal, family, social, educational, occupational or other important areas of functioning.

Possible manifestations of the persistent pattern include: repetitive sexual activities becoming a central focus of the individual's life to the point of neglecting health and personal care or other interests, activities and responsibilities; the individual making numerous unsuccessful efforts to control or significantly reduce the repetitive sexual behaviour; the individual continuing to engage in repetitive sexual behaviour despite adverse

consequences such as repeated relationship disruption; and the individual continuing to engage in repetitive sexual behaviour even when he or she no longer derives any satisfaction from it.

Although this category phenomenologically resembles substance dependence, it is included in the ICD-11 impulse control disorders section in recognition of the lack of definitive information on whether the processes involved in the development and maintenance of the disorder are equivalent to those observed in substance use disorders and behavioural addictions. Its inclusion in the ICD-11 will help to address unmet needs of treatment seeking patients as well as possibly reducing shame and guilt associated with help seeking among distressed individuals[50].

Intermittent explosive disorder

Intermittent explosive disorder is characterized by repeated brief episodes of verbal or physical aggression or destruction of property that represent a failure to control aggressive impulses, with the intensity of the outburst or degree of aggressiveness being grossly out of proportion to the provocation or precipitating psychosocial stressors.

Because such episodes can occur in a variety of other conditions (e.g., oppositional defiant disorder, conduct disorder, bipolar disorder), the diagnosis is not given if the episodes are better explained by another mental, behavioural or neurodevelopmental disorder.

Although intermittent explosive disorder was introduced in the DSM-III-R, it appeared in the ICD-10 only as an inclusion term under "other habit and impulse disorders". It is included in the ICD-11 impulse control disorders section in recognition of the substantial evidence of its validity and utility in clinical settings[51].

Premenstrual dysphoric disorder

Premenstrual dysphoric disorder (PMDD) is characterized by a variety of severe mood, somatic or cognitive symptoms that begin several days before the onset of menses, start to improve within a few days, and become minimal or absent within approximately one week following the onset of menses.

More specifically, the diagnosis requires a pattern of mood symptoms (depressed mood, irritability), somatic symptoms (lethargy, joint pain, overeating), or cognitive symptoms (concentration difficulties, forgetfulness) that have occurred during a majority of menstrual cycles within the past year. The symptoms are severe enough to cause significant distress or significant impairment in personal, family, social, educational, occupational or other important areas of functioning, and do not represent the exacerbation of another mental disorder.

In the ICD-11, PMDD is differentiated from the far more common premenstrual tension syndrome by the severity of the symptoms and the requirement that they cause significant distress or impairment[52]. The inclusion of PMDD in the research appendices of the DSM-III-R and DSM-IV stimulated a great deal of research that has established its validity and reliability[52,53], leading to its inclusion in both the ICD-11 and DSM-5. Although its primary location in the ICD-11 is in the chapter on diseases of the genitourinary system, PMDD is cross-listed in the subgrouping of depressive disorders due to the prominence of mood symptomatology.

SUMMARY OF CHANGES BY ICD-11 DISORDER GROUPING

The following sections summarize the changes introduced in each of the main disorder groupings of the ICD-11 chapter on mental, behavioural and neurodevelopmental disorders in addition to the new categories described in the previous section.

These changes have been made on the basis of a review of available scientific evidence by ICD-11 Working Groups and expert consultants, consideration of clinical utility and global applicability, and, where possible, the results of field testing.

Neurodevelopmental disorders

Neurodevelopmental disorders are those that involve significant difficulties in the acquisition and execution of specific intellectual, motor, language or social functions with onset during the developmental period. ICD-11 neurodevelopmental disorders encompass the ICD-10 groupings of mental retardation and disorders of psychological development, with the addition of attention deficit hyperactivity disorder (ADHD).

Major changes in the ICD-11 include the renaming of disorders of intellectual development from ICD-10 mental retardation, which was an obsolete and stigmatizing term that did not adequately capture the range of forms and etiologies associated with this condition[54]. Disorders of intellectual development continue to be defined on the basis of significant limitations in intellectual functioning and adaptive behaviour, ideally determined by standardized, appropriately normed and individually administered measures. In recognition of the lack of access to locally appropriate standardized measures or trained personnel to administer them in many parts of the world, and because of the importance of determining severity for treatment planning, the ICD-11 CDDG also provide a comprehensive set of behavioural indicator tables[55].

Separate tables for intellectual functioning and adaptive behaviour functioning domains (conceptual, social, practical) are organized according to three age groups (early childhood, childhood/adolescence and adulthood) and four levels of severity (mild, moderate, severe, profound). Behavioural indicators describe those skills and abilities that would be typically observed within each of these categories and are expected to improve the reliability of the characterization of severity and to

improve public health data related to the burden of disorders of intellectual development.

Autism spectrum disorder in the ICD-11 incorporates both childhood autism and Asperger's syndrome from the ICD-10 under a single category characterized by social communication deficits and restricted, repetitive and inflexible patterns of behaviour, interests or activities. Guidelines for autism spectrum disorder have been substantially updated to reflect the current literature, including presentations throughout the lifespan. Qualifiers are provided for the extent of impairment in intellectual functioning and functional language abilities to capture the full range of presentations of autism spectrum disorder in a more dimensional manner.

ADHD has replaced ICD-10 hyperkinetic disorders and has been moved to the grouping of neurodevelopmental disorders because of its developmental onset, characteristic disturbances in intellectual, motor and social functions, and common co-occurrence with other neurodevelopmental disorders. This move also addresses the conceptual weakness of viewing ADHD as more closely related to disruptive behaviour and dissocial disorders, given that individuals with ADHD are typically not intentionally disruptive.

ADHD can be characterized in the ICD-11 using qualifiers for predominantly inattentive, predominantly hyperactive-impulsive, or combined type, and is described across the lifespan.

Finally, chronic tic disorders, including Tourette syndrome, are classified in the ICD-11 chapter on diseases of the nervous system, but are cross-listed in the grouping of neurodevelopmental disorders because of their high co-occurrence (e.g., with ADHD) and typical onset during the developmental period.

Schizophrenia and other primary psychotic disorders

The ICD-11 grouping of schizophrenia and other primary psychotic disorders replaces the ICD-10 grouping of schizophrenia, schizotypal and delusional disorders. The term "primary" indicates that psychotic processes are a core feature, in contrast to psychotic symptoms that may occur as an aspect of other forms of psychopathology (e.g., mood disorders)[18].

In the ICD-11, schizophrenia symptoms have largely remained unchanged from the ICD-10, though the importance of Schneiderian first-rank symptoms has been de-emphasized. The most significant change is the elimination of all subtypes of schizophrenia (e.g., paranoid, hebephrenic, catatonic), due to their lack of predictive validity or utility in treatment selection. In lieu of the subtypes, a set of dimensional descriptors has been introduced[18]. These include: positive symptoms (delusions, hallucinations, disorganized thinking and behaviour, experiences of passivity and control); negative symptoms (constricted, blunted or flat affect, alogia or paucity of speech, avolition, anhedonia); depressive mood symptoms; manic mood symptoms; psychomotor symptoms (psychomotor agitation, psychomotor retardation, catatonic symptoms); and cognitive symptoms (particularly deficits in speed of processing, attention/concentration, orientation, judgment, abstraction, verbal or visual learning, and working memory). These same symptom ratings can also be applied to other categories in the grouping (schizoaffective disorder, acute and transient psychotic disorder, delusional disorder).

ICD-11 schizoaffective disorder still requires the near simultaneous presence of both the schizophrenia syndrome and a mood episode. The diagnosis is meant to reflect the current episode of illness and is not conceptualized as longitudinally stable.

ICD-11 acute and transient psychotic disorder is characterized by a sudden onset of positive psychotic symptoms that fluctuate rapidly in nature and intensity over a short period of time and persist no longer than three months. This corresponds only to the "polymorphic" form of acute psychotic disorder in the ICD-10, which is the most common presentation and one that is not indicative of schizophrenia[56,57]. Non-polymorphic subtypes of acute psychotic disorder in the ICD-10 have been eliminated and would instead be classified in the ICD-11 as "other primary psychotic disorder".

As in the ICD-10, schizotypal disorder is classified in this grouping and is not considered a personality disorder.

Mood disorders

Unlike in the ICD-10, ICD-11 mood episodes are not independently diagnosable conditions, but rather their pattern over time is used as a basis for determining which mood disorder best fits the clinical presentation.

Mood disorders are subdivided into depressive disorders (which include single episode depressive disorder, recurrent depressive disorder, dysthymic disorder, and mixed depressive and anxiety disorder) and bipolar disorders (which include bipolar type I disorder, bipolar type II disorder, and cyclothymia). The ICD-11 subdivides ICD-10 bipolar affective disorder into bipolar type I and type II disorders. The separate ICD-10 subgrouping of persistent mood disorders, consisting of dysthymia and cyclothymia, has been eliminated[58].

The diagnostic guidelines for depressive episode are one of the few places in the ICD-11 where a minimal symptom count is required. This is due to the longstanding research and clinical tradition of conceptualizing depression in this manner. A minimum of five of ten symptoms is required rather than the four of nine possible symptoms stipulated in ICD-10, thus increasing consistency with the DSM-5. The ICD-11 CDDG organize depressive symptoms into three clusters – affective, cognitive and neurovegetative – to assist clinicians in conceptualizing and recalling the full spectrum of depressive symptomatology. Fatigue is part of the neurovegetative symptom cluster but is no longer considered sufficient as an entry-level symptom; rather, either almost daily depressed mood or diminished interest in activities lasting at least two weeks is required. Hopelessness has been added as an additional cognitive symptom because of strong evidence of its predictive value for diagnoses of depressive disorders[59]. The ICD-11 CDDG provide clear guidance on

the differentiation between culturally normative grief reactions and symptoms that warrant consideration as a depressive episode in the context of bereavement[60].

For manic episodes, the ICD-11 requires the presence of the entry level symptom of increased activity or subjective experience of increased energy, in addition to euphoria, irritability or expansiveness. This is meant to guard against false positive cases that might be better characterized as normative fluctuations in mood. ICD-11 hypomanic episodes are conceptualized as an attenuated form of manic episodes in the absence of significant functional impairment.

Mixed episodes are defined in the ICD-11 in a way that is conceptually equivalent to the ICD-10, based on evidence for the validity of this approach[61]. Guidance is provided regarding the typical contrapolar symptoms observed when either manic or depressive symptoms predominate. The presence of a mixed episode indicates a bipolar type I diagnosis.

The ICD-11 provides various qualifiers to describe the current mood episode or remission status (i.e., in partial or in full remission). Depressive, manic and mixed episodes can be described as with or without psychotic symptoms. Current depressive episodes in the context of depressive or bipolar disorders can be further characterized by severity (mild, moderate or severe); by a melancholic features qualifier that bears a direct relationship with the concept of the somatic syndrome in ICD-10; and by a qualifier to identify persistent episodes of more than two years' duration. All mood episodes in the context of depressive or bipolar disorders can be further described using a prominent anxiety symptoms qualifier; a qualifier indicating the presence of panic attacks; and a qualifier to identify seasonal pattern. A qualifier for rapid cycling is also available for bipolar disorder diagnoses.

The ICD-11 includes the category of mixed depressive and anxiety disorder because of its importance in primary care settings[62,63]. This category has been moved from anxiety disorders in the ICD-10 to depressive disorders in the ICD-11 because of evidence of its overlap with mood symptomatology[64].

Anxiety and fear-related disorders

The ICD-11 brings together disorders with anxiety or fear as the primary clinical feature in this new grouping[65]. Consistent with ICD-11's lifespan approach, this grouping also includes separation anxiety disorder and selective mutism, which were placed among the childhood disorders in the ICD-10. The ICD-10 distinction between phobic anxiety disorders and other anxiety disorders has been eliminated in the ICD-11 in favor of the more clinically useful method of characterizing each anxiety and fear-related disorder according to its focus of apprehension[66]; that is, the stimulus reported by the individual as triggering his or her anxiety, excessive physiological arousal and maladaptive behavioural responses. Generalized anxiety disorder (GAD) is characterized by general apprehensiveness or worry that is not restricted to any particular stimulus.

In the ICD-11, GAD has a more elaborated set of essential features, reflecting advances in the understanding of its unique phenomenology; in particular, worry is added to general apprehension as a core feature of the disorder. Contrary to ICD-10, the ICD-11 CDDG specify that GAD can co-occur with depressive disorders as long as symptoms are present independent of mood episodes. Similarly, other ICD-10 hierarchical exclusion rules (e.g., GAD cannot be diagnosed together with phobic anxiety disorder or obsessive-compulsive disorder) are also eliminated, due to the better delineation of disorder phenomenology in the ICD-11 and the evidence that those rules interfere with detection and treatment of conditions requiring separate specific clinical attention.

In the ICD-11, agoraphobia is conceptualized as marked and excessive fear or anxiety that occurs in, or in anticipation of, multiple situations where escape might be difficult or help not available. The focus of apprehension is fear of specific negative outcomes that would be incapacitating or embarrassing in those situations, which is distinct from the narrower concept in the ICD-10 of fear of open spaces and related situations, such as crowds, where an escape to a safe place may be difficult.

Panic disorder is defined in the ICD-11 by recurrent unexpected panic attacks that are not restricted to particular stimuli or situations. The ICD-11 CDDG indicate that panic attacks which occur entirely in response to exposure or anticipation of the feared stimulus in a given disorder (e.g., public speaking in social anxiety disorder) do not warrant an additional diagnosis of panic disorder. Rather, a "with panic attacks" qualifier can be applied to the other anxiety disorder diagnosis. The "with panic attacks" qualifier can also be applied in the context of other disorders where anxiety is a prominent though not defining feature (e.g., in some individuals during a depressive episode).

ICD-11 social anxiety disorder, defined on the basis of fear of negative evaluation by others, replaces ICD-10 social phobias.

The ICD-11 CDDG specifically describe separation anxiety disorder in adults, where it is most commonly focused on a romantic partner or a child.

Obsessive-compulsive and related disorders

The introduction of the OCRD grouping in the ICD-11 represents a significant departure from the ICD-10. The rationale for creating an OCRD grouping distinct from anxiety and fear-related disorders, despite phenomenological overlap, is based on the clinical utility of collating disorders with shared symptoms of repetitive unwanted thoughts and related repetitive behaviours as the primary clinical feature. The diagnostic coherence of this grouping comes from emerging evidence of the shared validators among included disorders from imaging, genetic and neurochemical studies[35].

ICD-11 OCRD include obsessive-compulsive disorder, body dysmorphic disorder, olfactory reference disorder, hypochondriasis (illness anxiety disorder) and hoarding disorder.

Equivalent categories that exist in the ICD-10 are located in disparate groupings. Also included in OCRD is a subgrouping of body-focused repetitive behaviour disorders that includes trichotillomania (hair-pulling disorder) and excoriation (skin-picking) disorder, both sharing the core feature of repetitive behaviour without the cognitive aspect of other OCRDs. Tourette syndrome, a disease of the nervous system in ICD-11, is cross-listed in the OCRD grouping because of its frequent co-occurrence with obsessive-compulsive disorder.

The ICD-11 retains the core features of ICD-10 obsessive-compulsive disorder, that is, persistent obsessions and/or compulsions, but with some important revisions. The ICD-11 broadens the concept of obsessions beyond intrusive thoughts to include unwanted images and urges/impulses. Moreover, the concept of compulsions is expanded to include covert (e.g., repeated counting) as well as overt repetitive behaviours.

Although anxiety is the most common affective experience associated with obsessions, the ICD-11 explicitly mentions other phenomena reported by patients, such as disgust, shame, a sense of "incompleteness", or uneasiness that things do not look or feel "right". ICD-10 subtypes of OCD are eliminated, because the majority of patients report both obsessions and compulsions, and because they lack predictive validity for treatment response. The ICD-10 prohibition against diagnosing obsessive-compulsive disorder along with depressive disorders is removed in the ICD-11, reflecting the high rate of co-occurrence of these disorders and the need for distinct treatments.

Hypochondriasis (health anxiety disorder) is placed in OCRD rather than among anxiety and fear-related disorders, even though health preoccupations are often associated with anxiety and fear, because of shared phenomenology and patterns of familial aggregation with OCRD[67]. However, hypochondriasis (health anxiety disorder) is cross-listed in the anxiety and fear-related disorders grouping, in recognition of some phenomenological overlap.

Body dysmorphic disorder, olfactory reference disorder, and hoarding disorder are new categories in ICD-11 that have been included in the OCRD grouping.

In OCRDs that have a cognitive component, beliefs may be held with such intensity or fixity that they appear to be delusional. When these fixed beliefs are entirely consistent with the phenomenology of the OCRD, in the absence of other psychotic symptoms, the qualifier "with poor to absent insight" should be used, and a diagnosis of delusional disorder should not be assigned. This is intended to help guard against inappropriate treatment for psychosis among individuals with OCRDs[35].

Disorders specifically associated with stress

The ICD-11 grouping of disorders specifically associated with stress replaces ICD-10 reactions to severe stress and adjustment disorders, to emphasize that these disorders share the necessary (but not sufficient) etiologic requirement for exposure to a stressful event, as well as to distinguish included disorders from the various other mental disorders that arise as a reaction to stressors (e.g., depressive disorders)[41]. ICD-10 reactive attachment disorder of childhood and disinhibited attachment disorder of childhood are reclassified to this grouping owing to the lifespan approach of the ICD-11 and in recognition of the specific attachment-related stressors inherent to these disorders. The ICD-11 includes several important conceptual updates to the ICD-10 as well as the introduction of complex PTSD and prolonged grief disorder, which have no equivalent in the ICD-10.

PTSD is defined by three features that should be present in all cases and must cause significant impairment. They are: re-experiencing the traumatic event in the present; deliberate avoidance of reminders likely to produce re-experiencing; and persistent perceptions of heightened current threat. The inclusion of the requirement for re-experiencing the cognitive, affective or physiological aspects of the trauma in the here and now rather than just remembering the event is expected to address the low diagnostic threshold for PTSD in ICD-10[42].

Adjustment disorder in the ICD-11 is defined on the basis of the core feature of preoccupation with a life stressor or its consequences, while in the ICD-10 the disorder was diagnosed if symptoms occurring in response to a life stressor did not meet definitional requirements of another disorder.

Finally, acute stress reaction is no longer considered to be a mental disorder in the ICD-11, but instead is understood to be a normal reaction to an extreme stressor. Thus, it is classified in the ICD-11 chapter on "factors influencing health status or contact with health services", but cross-listed in the grouping of disorders specifically associated with stress to assist with differential diagnosis.

Dissociative disorders

The ICD-11 dissociative disorders grouping corresponds to ICD-10 dissociative (conversion) disorders, but has been significantly reorganized and simplified, to reflect recent empirical findings and to enhance clinical utility. Reference to the term "conversion" is eliminated from the grouping title[68]. ICD-11 dissociative neurological symptom disorder is conceptually consistent with ICD-10 dissociative disorders of movement and sensation, but is presented as a single disorder with twelve subtypes defined on the basis of the predominant neurological symptom (e.g., visual disturbance, non-epileptic seizures, speech disturbance, paralysis or weakness). ICD-11 dissociative amnesia includes a qualifier to indicate whether dissociative fugue is present, a phenomenon that is classified as a separate disorder in ICD-10.

The ICD-11 divides ICD-10 possession trance disorder into the separate diagnoses of trance disorder and possession trance disorder. The separation reflects the distinctive feature in possession trance disorder wherein the customary sense of personal identity is replaced by an external "possessing" identity attributed to the influence of a spirit, power, deity or other spiritual

entity. In addition, a greater range of more complex behaviours may be exhibited in possession trance disorder, while trance disorder typically involves the repetition of a small repertoire of simpler behaviours.

ICD-11 dissociative identity disorder corresponds to the concept of ICD-10 multiple personality disorder and is renamed to be consistent with currently used nomenclature in clinical and research contexts. The ICD-11 also introduces partial dissociative identity disorder, reflecting the fact that the preponderance of ICD-10 unspecified dissociative disorders is accounted for by presentations in which non-dominant personality states do not recurrently take executive control of the individual's consciousness and functioning.

Depersonalization and derealization disorder, located in the other neurotic disorders grouping in the ICD-10, is moved to the dissociative disorders grouping in the ICD-11.

Feeding and eating disorders

The ICD-11 grouping of feeding and eating disorders integrates ICD-10 eating disorders and feeding disorders of childhood, in recognition of the interconnectedness of these disorders across the lifespan, as well as reflecting the evidence that these disorders can apply to individuals across a broader range of ages[45,47].

The ICD-11 provides updated conceptualizations of anorexia nervosa and bulimia nervosa to incorporate recent evidence, which eliminates the need for ICD-10 "atypical" categories. It also includes the new entities of binge eating disorder, which is introduced based on empirical support for its validity and clinical utility, and ARFID, which expands upon ICD-10 feeding disorder of infancy and childhood.

Anorexia nervosa in the ICD-11 eliminates the ICD-10 requirement for the presence of a widespread endocrine disorder, because evidence suggests that this does not occur in all cases and, even when present, is a consequence of low body weight rather than a distinct defining feature of the disorder. Furthermore, cases without endocrine disorder were largely responsible for atypical anorexia diagnoses. The threshold for low body weight in ICD-11 is raised from 17.5 kg/m^2 to 18 kg/m^2, but the guidelines accommodate situations in which the body mass index may not adequately reflect a worsening clinical picture (e.g., precipitous weight loss in the context of other features of the disorder). Anorexia nervosa does not require "fat phobia" as in the ICD-10, to allow for the full spectrum of culturally diverse rationales for food refusal and expressions of body preoccupation.

Qualifiers are provided to characterize the severity of underweight status, given that extremely low body mass index is associated with greater risk of morbidity and mortality. A qualifier describing the pattern of associated behaviours is included (i.e., restricting pattern, binge-purge pattern).

Bulimia nervosa in the ICD-11 can be diagnosed regardless of the current weight of the individual, as long as the body mass index is not so low as to meet definitional requirements for anorexia nervosa. In lieu of specific minimal binge frequencies that are, in fact, not supported by evidence, the ICD-11 provides more flexible guidance. A bulimia nervosa diagnosis does not require "objective" binges and can be diagnosed on the basis of "subjective" binges, in which the individual eats more or differently than usual and experiences a loss of control over eating accompanied by distress, regardless of the amount of food actually eaten. This change is expected to reduce the number of unspecified feeding and eating disorder diagnoses.

Elimination disorders

The term "non-organic" is removed from the ICD-11 elimination disorders, which include enuresis and encopresis. These disorders are differentiated from those that can be better accounted for by another health condition or the physiological effects of a substance.

Disorders of bodily distress and bodily experience

ICD-11 disorders of bodily distress and bodily experience encompass two disorders: bodily distress disorder and body integrity dysphoria. ICD-11 bodily distress disorder replaces ICD-10 somatoform disorders and also includes the concept of ICD-10 neurasthenia. ICD-10 hypochondriasis is not included and instead is reassigned to the OCRD grouping.

Bodily distress disorder is characterized by the presence of bodily symptoms that are distressing to the individual and an excessive attention directed toward the symptoms, which may be manifest by repeated contact with health care providers[69]. The disorder is conceptualized as existing on a continuum of severity and can be qualified accordingly (mild, moderate or severe) depending on the impact on functioning. Importantly, bodily distress disorder is defined according to the presence of essential features, such as distress and excessive thoughts and behaviours, rather than on the basis of absent medical explanations for bothersome symptoms, as in ICD-10 somatoform disorders.

ICD-11 body integrity dysphoria is a newly introduced diagnosis that is incorporated into this grouping[48].

Disorders due to substance use and addictive behaviours

The ICD-11 grouping of disorders due to substance use and addictive behaviours encompasses disorders that develop as a result of the use of psychoactive substances, including medications, and disorders due to addictive behaviours that develop as a result of specific repetitive rewarding and reinforcing behaviours.

The organization of ICD-11 disorders due to substance use is consistent with the approach in the ICD-10, whereby clinical syndromes are classified according to substance classes[70].

However, the list of substances in the ICD-11 is expanded to reflect current availability and contemporary use patterns of substances. Each substance or substance class can be associated with mutually exclusive primary clinical syndromes: single episode of harmful substance use or harmful pattern of substance use, which represents a refinement of ICD-10 harmful use; and substance dependence. Substance intoxication and substance withdrawal can be diagnosed either together with primary clinical syndromes or independently as a reason for delivery of health services when the pattern of use or possibility of dependence is unknown.

Given the extremely high global disease burden of disorders due to substance use, the grouping has been revised to optimally enable the capture of health information that will be useful in multiple contexts, support accurate monitoring and reporting, and inform both prevention and treatment[70]. The addition of ICD-11 single episode of harmful substance use provides an opportunity for early intervention and prevention of escalation of use and harm, whereas the diagnoses of harmful pattern of substance use and substance dependence suggest the need for increasingly intensive interventions.

The ICD-11 expands the concept of harm to health due to substance use to comprise harm to the health of other people, which can include either physical harm (e.g., due to driving while intoxicated) or psychological harm (e.g., development of PTSD following an automobile accident).

The ICD-11 includes substance-induced mental disorders as syndromes characterized by clinically significant mental or behavioural symptoms that are similar to those of other mental disorders but that develop due to psychoactive substance use. Substance-induced disorders can be related to substance intoxication or substance withdrawal, but the intensity or duration of symptoms are substantially in excess of those characteristic of intoxication or withdrawal due to the specified substances.

The ICD-11 also includes categories of hazardous substance use, which are not classified as mental disorders but rather are situated in the chapter on "factors influencing health status or contact with health services". These categories may be used when a pattern of substance use increases the risk of harmful physical or mental health consequences to the user or to others to an extent that warrants attention and advice from health professionals, but no overt harm has yet occurred. They are meant to signal opportunities for early and brief interventions, particularly in primary care settings.

ICD-11 disorders due to addictive behaviours include two diagnostic categories: gambling disorder (pathological gambling in ICD-10) and gaming disorder, which is newly introduced[49]. In ICD-10, pathological gambling was classified as a habit and impulse disorder. However, recent evidence points to important phenomenological similarities between disorders due to addictive behaviours and substance use disorders, including their higher co-occurrence as well as the common feature of being initially pleasurable followed by progression to loss of hedonic value and need for increased use. Moreover, disorders due to substance use and disorders due to addictive behaviours appear to share similar neurobiology, especially activation and neuroadaptation within the reward and motivation neural circuits[71].

Impulse control disorders

ICD-11 impulse control disorders are characterized by the repeated failure to resist a strong impulse, drive or urge to perform an act that is rewarding to the person, at least in the short-term, despite longer-term harm either to the individual or to others.

This grouping includes pyromania and kleptomania, which are classified in the ICD-10 under habit and impulse disorders.

The ICD-11 introduces intermittent explosive disorder and reclassifies ICD-10 excessive sexual drive to this grouping as ICD-11 compulsive sexual behaviour disorder[50,72,73].

Disruptive behaviour and dissocial disorders

The ICD-11 grouping of disruptive behaviour and dissocial disorders replaces ICD-10 conduct disorders. The new term better reflects the full range of severity of behaviours and phenomenology observed in the two conditions included in this grouping: oppositional defiant disorder and conduct-dissocial disorder. An important change introduced in the ICD-11 is that both disorders can be diagnosed across the lifespan, whereas the ICD-10 construes them as disorders of childhood. Additionally, the ICD-11 introduces qualifiers that characterize subtypes of disruptive behaviour and dissocial disorders intended to improve clinical utility (e.g., prognostically).

ICD-11 oppositional defiant disorder is conceptually similar to its ICD-10 equivalent category. However, a "with chronic irritability and anger" qualifier is provided to characterize those presentations of the disorder with prevailing, persistent irritable mood or anger. This presentation is recognized to significantly increase the risk for subsequent depression and anxiety. The ICD-11 conceptualization of this presentation as a form of oppositional defiant disorder is concordant with current evidence and diverges from the DSM-5 approach of introducing a new disorder, disruptive mood dysregulation disorder[74-76].

ICD-11 conduct disorder consolidates the three separate conduct disorder diagnoses classified in ICD-10 (i.e., confined to the family context, unsocialized, socialized). The ICD-11 acknowledges that disruptive behaviour and dissocial disorders are frequently associated with problematic psychosocial environments and psychosocial risk factors, such as peer rejection, deviant peer group influences, and parental mental disorder. A clinically meaningful distinction between childhood and adolescent onset of the disorder can be indicated with a qualifier, based on the evidence that earlier onset is associated with more severe pathology and a poorer course of the disorder.

A qualifier to indicate limited prosocial emotions can be assigned to both disruptive behaviour and dissocial disorders. In the context of an oppositional defiant disorder diagnosis, this presentation is associated with a more stable and extreme pattern of oppositional behaviours. In the context of conduct-dissocial disorder, it is associated with a tendency towards a more severe, aggressive and stable pattern of antisocial behaviour.

Personality disorders

Problems with the ICD-10 classification of ten specific personality disorders included substantial underdiagnosis relative to their prevalence among individuals with other mental disorders, the fact that only two of the specific personality disorders (emotionally unstable personality disorder, borderline type, and dissocial personality disorder) were recorded with any frequency in publicly available databases, and that rates of co-occurrence were extremely high, with most individuals with severe disorders meeting the requirements for multiple personality disorders[16,17].

The ICD-11 CDDG ask the clinician to first determine whether the individual's clinical presentation meets the general diagnostic requirements for personality disorder. The clinician then determines whether a diagnosis of mild, moderate or severe personality disorder is appropriate, based on: a) the degree and pervasiveness of disturbances in functioning of aspects of the self (e.g., stability and coherence of identity, self-worth, accuracy of self-view, capacity for self-direction); b) the degree and pervasiveness of interpersonal dysfunction (e.g., understanding others' perspectives, developing and maintaining close relationships, managing conflict) across various contexts and relationships; c) the pervasiveness, severity and chronicity of emotional, cognitive and behavioural manifestations of personality dysfunction; and d) the extent to which these patterns are associated with distress or psychosocial impairment.

Personality disorders are then further described by indicating the presence of characteristic maladaptive personality traits. Five trait domains are included: negative affectivity (the tendency to experience a broad range of negative emotions); detachment (the tendency to maintain social and interpersonal distance from others); dissociality (disregard for the rights and feelings of others, encompassing both self-centeredness and lack of empathy); disinhibition (the tendency to act impulsively in response to immediate internal or environmental stimuli without consideration of longer-term consequences); and anankastia (a narrow focus on one's rigid standard of perfection and of right and wrong and on controlling one's own and others' behaviour to ensure conformity to those standards). As many of these trait domains may be assigned as part of the diagnosis as are judged to be prominent and contributing to the personality disorder and its severity.

In addition, an optional qualifier is provided for "borderline pattern". This qualifier is intended to ensure continuity of care during the transition from the ICD-10 to the ICD-11 and may enhance clinical utility by facilitating the identification of individuals who may respond to certain psychotherapeutic treatments. Additional research will be needed to determine whether it provides information that is distinct from that provided by the trait domains.

The ICD-11 also includes a category for personality difficulty, which is not considered a mental disorder, but rather is listed in the grouping of problems associated with interpersonal interactions in the chapter on "factors influencing health status or contact with health services". Personality difficulty refers to pronounced personality characteristics that may affect treatment or provision of health services but do not rise to the level of severity to warrant a diagnosis of personality disorder.

Paraphilic disorders

The ICD-11 grouping of paraphilic disorders replaces the ICD-10 grouping of disorders of sexual preference, consistent with contemporary terminology used in research and clinical contexts. The core feature of paraphilic disorders is that they involve sexual arousal patterns that focus on non-consenting others[77].

ICD-11 paraphilic disorders include exhibitionistic disorder, voyeuristic disorder, and pedophilic disorder. Newly introduced categories are coercive sexual sadism disorder, frotteuristic disorder, and other paraphilic disorder involving non-consenting individuals. A new category of other paraphilic disorder involving solitary behaviour or consenting individuals is also included, which can be assigned when sexual thoughts, fantasies, urges or behaviours are associated with substantial distress (but not as a consequence of rejection or feared rejection of the arousal pattern by others) or confer direct risk of injury or death (e.g., asphyxophilia).

The ICD-11 distinguishes between conditions that are relevant to public health and clinical psychopathology and those that merely reflect private behaviour, and for this reason the ICD-10 categories of sadomasochism, fetishism, and fetishistic transvestism have been eliminated[26].

Factitious disorders

The ICD-11 introduces a new grouping of factitious disorders that includes factitious disorder imposed on the self and factitious disorder imposed on another. This grouping is conceptually equivalent to the ICD-10 diagnosis of intentional production or feigning of symptoms or disabilities, either physical or psychological (factitious disorder), but extended to include the clinical situation where an individual feigns, falsifies, or intentionally induces or aggravates medical, psychological or behavioural signs and symptoms in another individual (usually a child).

The behaviours are not solely motivated by obvious external rewards or incentives, and are distinguished on this basis from

malingering, which is not classified as a mental, behavioural or neurodevelopmental disorder, but rather appears in the chapter on "factors influencing health status or contact with health services".

Neurocognitive disorders

ICD-11 neurocognitive disorders are acquired conditions characterized by primary clinical deficits in cognitive functioning, and include most conditions that are classified among ICD-10 organic, including symptomatic, mental disorders. Thus, the grouping includes delirium, mild neurocognitive disorder (called mild cognitive disorder in ICD-10), amnestic disorder, and dementia. Delirium and amnestic disorder can be classified as due to a medical condition classified elsewhere, due to a substance or a medication, or due to multiple etiological factors. Dementia may be classified as mild, moderate or severe.

The syndromal characteristics of dementia associated with different etiologies (e.g., dementia due to Alzheimer disease, dementia due to human immunodeficiency virus) are classified and described within the chapter on mental, behavioural and neurodevelopmental disorders, whereas the underlying etiologies are classified using categories from the chapter on diseases of the nervous system or other sections of the ICD, as appropriate[78]. Mild neurocognitive disorder can also be identified in conjunction with an etiological diagnosis, reflecting improved detection methods for early cognitive decline, which represents an opportunity to provide treatment in order to delay disease progression. The ICD-11 therefore clearly recognizes the cognitive, behavioural and emotional components of neurocognitive disorders as well as their underlying causes.

CONCLUSIONS

The development of the ICD-11 CDDG for mental, behavioural and neurodevelopmental disorders and their underlying statistical classification represents the first major revision of the world's foremost classification of mental disorders in nearly 30 years. It has involved an unprecedented level and range of global, multilingual and multidisciplinary participation. Substantial changes have been made to increase scientific validity in the light of current evidence and to enhance clinical utility and global applicability based on a systematic program of field testing.

Now, both the version of the ICD-11 chapter to be used by WHO member states for health statistics and the CDDG for use in clinical settings by mental health professionals are substantively complete. In order for the ICD-11 to achieve its potential in the world, the WHO's focus will shift to working with member states and with health professionals on implementation and training.

The implementation of a new classification system involves the interaction of the classification with each country's laws, policies, health systems and information infrastructure. Multiple modalities must be developed for training a vast array of international health professionals. We look forward to continuing our very productive collaboration with the WPA and to working with member states, academic centers, professional and scientific organizations and with civil societies in this next phase of work.

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