Accuracy of Diagnostic Judgments Using ICD-11 vs. ICD-10 Diagnostic Guidelines for Obsessive-Compulsive and Related Disorders

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Abstract

Background: We report results of an internet-based field study evaluating the diagnostic guidelines for the newly introduced ICD-11 grouping of obsessive-compulsive and related disorders (OCRD). We examined accuracy of clinicians' diagnostic judgments applying draft ICD-11 as compared to the ICD-10 diagnostic guidelines to standardized case vignettes.

Methods: 1,717 mental health professionals who were members of the World Health Organization's Global Clinical Practice Network completed the study in Chinese, English, French, Japanese, Russian or Spanish. Participants were randomly assigned to apply ICD-11 or ICD-10 guidelines to one of nine pairs of case vignettes.

Results: Participants using ICD-11 outperformed those using ICD-10 in correctly identifying newly introduced OCRD, although results were mixed for differentiating OCRD from disorders in other groupings largely due to clinicians having difficulty differentiating challenging presentations of OCD. Clinicians had difficulty applying a three-level insight qualifier, although the 'poor to absent' level assisted with differentiating OCRD from psychotic disorders. Brief training on the rationale for an OCRD grouping did not improve diagnostic accuracy suggesting sufficient detail of the proposed guidelines.

Limitations: Standardized case vignettes were manipulated to include specific characteristics; the degree of accuracy of clinicians' diagnostic judgments about these vignettes may not generalize to application in routine clinical practice.

Conclusions: Overall, use of the ICD-11 guidelines resulted in more accurate diagnosis of case vignettes compared to the ICD-10 guidelines, particularly in differentiating OCRD presentations from one another. Specific areas in which the ICD-11 guidelines did not perform as intended provided the basis for further revisions to the guidelines.

Keywords: obsessive-compulsive and related disorders; diagnosis; classification; international classification of diseases and related health problems; field study; ICD-11.

Introduction

Core constitutional functions of the World Health Organization (WHO) include establishing and maintaining international classification systems for health and standardizing diagnostic procedures. The World Health Assembly, WHO's governing body comprising the health ministers of all 194 WHO member states, approved the 11th Revision of the International Classification of Diseases and Related Health Problems (ICD-11, WHO, 2019) in May 2019. The statistical version of the ICD-11 does not contain sufficient information for implementation in global mental health settings (WHO, 1992). The WHO Department of Mental Health and Substance Abuse has developed Clinical Descriptions and Diagnostic Guidelines (CDDG) for ICD-11 Mental, Behavioural, and Neurodevelopmental Disorders to provide detailed guidance to clinicians with the goal of improving detection and diagnosis of mental disorders in a range of clinical settings around the world (First et al., 2015). Improvements in clinical utility and global applicability as compared to the ICD-10 CDDG were established as major aims of the new volume, with the ultimate goal of providing WHO member states with a better tool for reducing the global disease burden of mental disorders (International Advisory Group for the Revision of ICD-10 Mental and Behavioural Disorders, 2011). As part of this process, a range of expert Working Groups were appointed, including representatives from each WHO global region, to develop recommendations for changes in specific content areas.

An area identified as requiring significant attention was obsessive-compulsive and related disorders (OCRD). In the more than 25 years since the publication of the ICD-10 (WHO, 1992), substantial knowledge has accrued suggesting the validity and utility of introducing new diagnoses to the classification and combining these with previously listed disorders to form an OCRD grouping separate from anxiety and fear-related disorders (Stein et al., 2016; Kogan et al.,

2016). The ICD-11 Working Group on OCRD conducted comprehensive evidence reviews, including examination of the evidence base for the American Psychiatric Association's Diagnostic and Statistical Manual of Mental Disorders, 5th Edition (DSM-5, American Psychiatric Association, 2013) to develop recommendations for revisions to the ICD-10 diagnostic guidelines (see First et al., 2015). The rationale for a separate OCRD grouping included phenomenological commonalities among the different constituent disorders of repetitive thoughts and behaviours as well as shared validators that include neurocircuitry and neurochemical abnormalities (Nikolaus et al., 2010; Milad and Rauch, 2012), familiarity and genetic risk factors (Bienvenu et al., 2012; Monzani et al., 2014), and overlapping approaches to assessment and treatment (Fineberg et al., 2014). Several new diagnostic entities were introduced to the ICD-11 OCRD grouping based on emerging evidence of their validity, significant prevalence and associated impairment. These included body dysmorphic disorder, olfactory reference disorder, and hoarding disorder (Stein et al., 2016). (In ICD-10, body dysmorphic disorder is described as a type of hypochondriasis.) A subgrouping of body-focused repetitive behaviour disorders including trichotillomania and the newly introduced excoriation disorder has also been incorporated into ICD-11 but was not evaluated in the present study.

The Working Group also recommended changes to previous ICD-10 guidelines for obsessive-compulsive disorder (OCD) and hypochondriasis. The clinical phenomenology of obsessions and compulsions described in ICD-11 better reflects current knowledge of the cardinal symptoms of the disorder. Changes include defining obsessions not only as unwanted thoughts but also as unwanted images and urges/impulses, and defining compulsions as including covert behaviors or mental compulsions (e.g., repeatedly reciting prayers in response to obsessions) rather than being restricted to overt behaviors. As described in the ICD-11

guidelines, the affective component of OCD may include a range of experiences beyond anxiety, namely shame, disgust, feelings of "incompleteness", and a sense that things do not look or feel "just right". The OCD subtypes in ICD-10 (predominantly obsessional thoughts or ruminations, predominantly compulsive acts, and mixed obsessional thoughts and acts) were removed because they lack clinical utility, including predictive validity for treatment response (Stein et al., 2016). Hierarchical classification rules giving diagnostic primacy to depression over OCD were eliminated to improve detection of the latter.

Hypochondriasis, previously classified as a somatoform disorder in ICD-10, has been reconceptualized as an OCRD. Hypochondriasis shares multiple validators with OCD and (Bienvenu et al., 2012; Stein et al., 2016) as well as phenomenological similarities, namely presence of intrusive preoccupations and repetitive behaviors such as repeated checking of the body for signs of illness, searching for information about a perceived illness, and reassurance seeking from health professionals (Rachman, 2012). The ICD-11 guidelines emphasize the intrusive nature of hypochondriacal preoccupations and associated repetitive behaviors; somatic symptoms are not a required feature.

The Working Group also recommended inclusion of a qualifier to allow clinicians to specify the degree of insight about the irrationality of patients' OCRD-related beliefs. Although many individuals with OCRD can acknowledge at least some of the time that thoughts or behaviors central to their disorder are untrue or excessive (e.g., the conviction that one will become seriously ill if washing rituals are not maintained in OCD), some cannot. These latter individuals may at times appear to be delusional in the degree of conviction or fixity with which these beliefs are held. According to the ICD-10 guidelines, such individuals would qualify for a delusional disorder diagnosis. In contrast, the ICD-11 guidelines indicate that erroneous beliefs

or behaviors that have explanations that appear to be delusional should not be viewed as reflecting a separate psychotic process when they are fully consistent with the symptomatology of the relevant OCRD (O'Dwyer and Marks, 2000, Stein et al., 2016). This is similar to the way in which erroneous beliefs about body shape or weight or behaviors such as food restriction are viewed in the context of anorexia nervosa. This change was partly intended to discourage initial use of antipsychotic medications among patients with OCRD (e.g., Hirschtritt et al., 2017). The proposal for ICD-11 tested in this study included three separate insight levels, consistent with DSM-5: (1) fair to good insight, characterizing individuals who think that their beliefs are probably untrue or are regularly able to entertain the possibility that their beliefs may not be true; (2) poor insight, characterizing individuals who think that their beliefs are probably true; and (3) no insight, characterizing individuals who, all or almost all of the time, are completely convinced that the beliefs are true.

The present study is part of a comprehensive group of developmental field studies that have assessed the impact of proposed changes to the ICD-10 Mental and Behavioural Disorders chapter on clinical decision making (Keeley et al., 2016, Reed et al., 2018). This study focusing on disorders included in the newly introduced OCRD grouping is a vignette-based, case-controlled study conducted via the internet with participants drawn from the Global Clinical Practice Network (GCPN; https://gcp.network, Reed et al., 2015). The GCPN comprises more than 15,000 multidisciplinary mental health professionals from more than 150 countries who have agreed to assist WHO by participating in field studies related to the ICD-11.

Based on the recommended revisions for the OCRD grouping, four overarching research questions were articulated. For each research question, several paired case vignette comparisons were employed to test clinicians' ability to accurately apply specific conceptual distinctions

introduced in the proposed ICD-11 guidelines. A brief description of the vignettes used in the study is provided in Table 1 and a list of the paired comparisons is provided in Table 2. Each vignette pair was designed to evaluate the impact of a specific change to the guidelines. The four research questions were as follows:

1. Can clinicians accurately differentiate disorders newly introduced in ICD-11 from existing disorders that may have overlapping symptom presentations (Table 2: Comparisons 1, 2) and from normal variation (Table 2: Comparison 3). Given that the new disorders reflect recognized clinical populations, how are such cases classified in ICD-10?
2. Do clinicians using ICD-11 more accurately differentiate OCRDs from disorders classified in other groupings that share overlapping features as compared to those using ICD-10 guidelines? (Table 2: Comparisons 4, 5, 6, 7)
3. Do clinicians using the ICD-11 guidelines better differentiate case vignettes depicting patients with poor or no insight (i.e., individuals holding beliefs that appear delusional but that are entirely consistent with the symptomatology of an OCRD) from patients with delusional disorder when using the ICD-11 as compared to ICD-10 guidelines? (Table 2: Comparisons 8, 9). Do clinicians accurately apply the three levels of insight proposed for the ICD-11 OCRD grouping?
4. Considering that most clinicians do not identify the OCRD grouping as part of their natural taxonomy of psychopathology (Reed et al., 2013; Roberts et al., 2012), does a brief online conceptual training on the rationale for an OCRD grouping improve clinicians' diagnostic accuracy as compared to using the ICD-11 without such training? (Table 2: all comparison pairs).

Findings have been used to inform additional revisions to the guidelines prior to publication.

Method

Participants

All registered GCPN members who were actively engaged in clinical services (e.g., seeing patients, providing clinical supervision) to individuals with mental disorders and had identified themselves as fluent or proficient in one of the six study languages (Chinese, English, French, Japanese, Russian and Spanish) were invited to participate in the study. At the time of the study, 9,391 GCPN members qualified for the study and were invited to participate. 2,448 (26.1%) responded to the online survey link and agreed to participate.

A total of 1,717 participants from over 90 countries provided completed diagnostic ratings for both vignettes presented to them and were included in the current analysis. Completers differed significantly from those invited to participate but did not respond on several demographic variables including gender (X_2 (2) = 36.50, $p < .001$), geographic region (X_2 (9) = 59.14, $p < .001$), age (t (3042.94) = 6.50, $p < .001$) and years of experience (t (9386) = 6.51, $p < .001$) but not by profession (X_2 (9) = 13.48, $p = .15$). Completers, as compared to those invited, were more likely to be male (7% difference), were less likely to be from the Americas (9% difference), were older (on average 1.87 years), and were more experienced (on average 1.72 years). Demographic information for participants is provided in Table 3. The largest number of participants resided in Europe (37.5%), followed by the Asian portion of the Western Pacific Region (24.5%), Latin America and the Caribbean (11.6%), the US and Canada (10.7%), and South-East Asian Region (7.2%). There were slightly more male (59.4%) than female (40.5%) participants, with three participants indicating ‘other’ (0.1%). The mean age of the participants was 46.7 years (SD = 11.2), with a mean of 15.5 years (SD = 10.3) of clinical experience. Most

participants were physicians (59.4%), primarily psychiatrists, and an additional 26.9% were psychologists. The remaining participants had varied professional backgrounds (Table 3). Close to half of the participants (48.7%) completed the study in English, whereas the remainder completed the study in one of the other five languages (see Table 3).

Procedure

The study was conducted via the Qualtrics™ internet-based survey platform (https://www.qualtrics.com, Provo, USA). Upon entry into the study, participants were randomly assigned in equal proportions to one of the three conditions: ICD-10, ICD-11, or ICD-11 plus brief training. Those assigned to the ICD-11 plus brief training condition were shown eight training slides that provided the rationale for the new grouping and new categories and then answered three multiple choice questions to ensure comprehension. Participants in all three conditions were presented with the assigned diagnostic guidelines (ICD-10 or ICD-11) for disorders in the OCRD grouping and disorders with overlapping features, and were instructed to apply them to the patients described in the vignettes. All participants were randomly assigned to one of nine paired-vignette comparisons addressing one of the key research questions described above (Table 2). Thus, each participant was asked to read two paired vignettes according to the comparison to which they were randomly assigned (e.g. Comparison 1: Vignette 1A paired with 1B). The two paired vignettes were presented in a counter-balanced order across participants.

After reading each vignette, participants selected a diagnosis from a list of twelve ICD-10 or ICD-11 diagnoses provided (including all entities from the OCRD group as well as selected disorders from related groupings containing disorders with shared features (Table 4). Participants could also choose to assign no diagnosis or indicate a different specified diagnosis using a text box. Participants had the opportunity to review their assigned diagnostic guidelines while

selecting the most appropriate diagnosis. After assigning a diagnosis, participants were prompted to review each essential feature of the selected diagnosis and indicate whether the case vignette included evidence for its presence or absence. This step was included to be able to examine clinical decision-making (e.g., in the absence of evidence for a particular essential feature, do clinicians disregard the guidelines and still assign the diagnosis). Those assigned to one of the ICD-11 conditions were asked to select a level of insight qualifier, if applicable. Upon completion of the first case vignette, participants were presented with the second case vignette repeating the procedure described above.

All study procedures were exempted from review by the WHO Ethics Review Committee (Protocol ID RPC569) and by the Human Subjects Committee of the University of Kansas (HSCL #20804). University of Kansas servers hosted the survey system used in the study. All participants were presented with an online informed consent document describing the study and had to indicate their consent to participate in order to continue.

Study Materials

Fifteen case vignettes were developed to test nine comparisons. Case vignettes were developed by invited experts to depict specified disorders in a clinically realistic manner, typically based on real cases, using a format and guidelines for vignette development provided by WHO. Each vignette was approximately 250 words in length and included three sections (i.e., referral, presenting symptoms, and additional background information). Vignettes were subsequently independently evaluated by nine international experts to ensure diagnostic agreement, and modified when agreement was found to be less than perfect across raters (see Evans, et al., 2015; Keeley et al., 2016). The proposed ICD-11 guidelines for the OCRD as well as those for depressive episode, generalized anxiety disorder, social anxiety disorder and

delusional disorder were included and presented to participants assigned to the ICD-11 conditions. The ICD-11 guidelines included three sections for each disorder category (i.e., essential features, additional features, and boundaries with normality and other disorders). The ICD-10 guidelines for equivalent categories were included and presented to participants assigned to the ICD-10 condition.

All materials were developed in English and then translated into Chinese, French, Japanese, Russian and Spanish. Translators followed a rigorous forward and backward translation procedure conducted by bilingual mental health specialists. Occasionally, translation efforts suggested wording clarifications to materials in English in order to maintain conceptual equivalence. Data collection occurred between August 2014 and November 2017.

Data Analysis

Two-way chi-square statistics were used for the bivariate comparisons. Comparisons of interest included the diagnostic accuracy for each of the conditions (i.e., ICD-10, ICD-11, and ICD-11 with brief training) analyzed separately for each of the two vignettes in a given comparison condition (e.g., comparing accuracy for ICD-10 to ICD-11 for a vignette depicting an OCD case).

Results

Research Question 1: Newly Introduced OCRD Diagnostic Categories

Only minor differences were found by language or geographic region, and none affected the interpretation of the results presented in this article. Thus, the language of survey administration and participants' geographic region were collapsed for all analyses.

Comparison 1 (Table 5) tested the consistency with which participants were able to differentiate a prototypical case of OCD with hoarding symptoms from hoarding disorder. For

the OCD vignette, there were no significant differences in accuracy between ICD-11 conditions and the ICD-10 condition, [χ^2 (1) = 2.32, p = .13]. However, a higher proportion of participants in the ICD-10 condition (31.5% in the ICD-10 and 18.2% in the ICD-11 conditions, respectively) erroneously assigned delusional disorder. For the hoarding disorder vignette, participants in the ICD-11 conditions were significantly more accurate than those in the ICD-10 condition [χ^2 (1) = 36.78, p < .001]. Participants in the ICD-10 condition selected the correct diagnosis less often than those in the ICD-11 conditions despite the fact that in the ICD-10 condition both OCD or Other OCD were permitted as correct diagnoses. Specifically, 12.3% of those in the ICD-10 condition erroneously selected delusional disorder (compared to 0% for ICD-11) and an additional 17.8% participants indicated a different user-specified diagnosis as the correct diagnosis (compared to one participant for ICD-11).

Comparison 2 (Table 5) contrasted a vignette depicting a case of body dysmorphic disorder in which the individual was focused on the appearance of her skin with one describing a case of hypochondriasis in which the preoccupation focused on skin cancer. For the body dysmorphic disorder vignette, participants in the ICD-11 condition were significantly more accurate than those in the ICD-10 condition [χ^2 (1) = 86.93, p < .001]. Notably, only 31.6% of the participants in the ICD-10 condition assigned the correct diagnosis (hypochondriacal disorder under ICD-10) as compared to 84.8% in the ICD-11 condition. 36.7% of the participants in the ICD-10 condition incorrectly diagnosed the patient described in the vignette with OCD or other OCD. In contrast, no differences were found between ICD-11 and ICD-10 in accurately diagnosing a hypochondriasis vignette (χ^2 (1) = 0.49, p = .48).

Comparison 3 (Table 5) presented participants with a vignette depicting an individual with body dysmorphic disorder and a vignette depicting a person expressing dissatisfaction with

a perceived bodily flaw but without persistent preoccupation or repetitive checking behaviors, thereby not meeting the definitional threshold for any ICD-11 diagnosis. According to ICD-10, however, this second vignette could be diagnosed with hypochondriacal disorder or assigned no diagnosis. For the body dysmorphic disorder vignette, participants in the ICD-11 condition displayed greater accuracy than those in the ICD-10 condition [χ_2 (1) = 45.70, $p < .001$]. A large majority of the participants in the ICD-11 condition (87.5%) correctly diagnosed body dysmorphic disorder, with only a small percentage (4.2%) incorrectly assigning a diagnosis of OCD. In contrast, 39.0% of participants in the ICD-10 condition correctly diagnosed hypochondriacal disorder, and 25.4% incorrectly assigned a diagnosis of OCD. For the vignette depicting a subthreshold case, participants in the ICD-10 condition performed better than those in the ICD-11 condition [χ_2 (1) = 4.32, $p = .04$]. Notably, 20.8% of participants in the ICD-11 condition erroneously diagnosed body dysmorphic disorder compared to 8.5% of participants who diagnosed hypochondriacal disorder in the ICD-10 condition.

Research Question 2: Differentiating OCRD from Disorders with Similar Features

In comparison 4 (Table 5), the first vignette described a person with symptoms of OCD including mental obsessions about personal failings and rituals and the second a person in a depressive episode with prototypic depressive symptoms including repetitive depressive ruminations. For the OCD vignette, there was no significant difference between the ICD-11 and ICD-10 conditions in assigning a correct diagnosis [χ_2 (1) = 0.06, $p = .81$]. For the depressive episode vignette, participants using ICD-10 were more accurate than those using ICD-11 [χ_2 (1) = 4.11, $p = .04$].

In comparison 5, participants were presented with a vignette depicting an individual with OCD who experiences intrusive thoughts related to doubts about a distressing event who engages

in compulsions to neutralize anxiety and a vignette depicting an individual with generalized anxiety disorder who experiences worries in multiple areas. For the OCD vignette, there was no significant difference in diagnostic accuracy between ICD-11 and ICD-10 conditions [χ_2 (1) = 0.87, p = .35]. For the generalized anxiety disorder vignette, participants in the ICD-10 condition were more likely to apply the correct diagnosis as compared to the ICD-11 condition [χ_2 (1) = 4.73, p = .03]. Those in the ICD-11 condition were more likely to apply a diagnosis of OCD or Other OCRD (ICD-11: 54.2% vs. ICD-10: 37.5%).

Comparison 6 (Table 5) tested clinicians' ability to differentiate preoccupations characteristic of hypochondriasis from other forms of somatic preoccupations found in bodily distress disorder. In contrast to bodily distress disorder, which is characterized by preoccupations with distressing and disabling somatic symptoms, a diagnosis of hypochondriasis must include fears of having one or more serious, progressive or life-threatening illnesses. While symptoms may be present, the focus is on their meaning and not on the disability associated with them (Stein et al., 2016). For the hypochondriasis vignette, there were no differences in performance between participants in ICD-11 and ICD-10 conditions [χ_2 (1) < 0.001, p = .98]), with a large majority (82.9% in ICD-11 and 82.8% in ICD-10) correctly assigning hypochondriasis. With respect to the bodily distress disorder vignette, a similar pattern of results was observed such that there were no significant differences in performance between the two conditions [χ_2 (1) < 0.001, p = .98]. However, two possible diagnoses were considered correct for ICD-10—undifferentiated somatoform disorder (12.5%) and persistent somatoform pain disorder (64.0%).

Comparison 7 (Table 5) evaluated participants' ability to differentiate olfactory reference disorder, a new diagnostic entity in the ICD-11 OCRD, from social anxiety disorder (social phobias in ICD-10). Olfactory reference disorder is characterized by preoccupations of emitting

a foul odor, whereas individuals with social anxiety disorder generally have multiple preoccupations about how they will be perceived and negatively evaluated by others on the basis of their behavior or manifest symptoms of anxiety (Kogan et al., 2016). Participants were presented first with a vignette describing an individual preoccupied with a barely perceptible body odor accompanied by anxiety about others noticing the odor and a second describing an individual with symptoms of social anxiety disorder concerned about others' judgment of their anxiety symptoms. Under ICD-10, preoccupation with perceived body odor can also be interpreted as a form of delusion, and thus the person described in the first vignette could also be judged to meet the diagnostic requirements for ICD-10 delusional disorder. Overall, participants in the ICD-11 conditions significantly outperformed those in the ICD-10 condition for the first vignette [χ_2 (1) = 57.02, $p < .001$] such that more than 90% of participants using ICD-11 correctly selected olfactory reference disorder. Responses among participants in the ICD-10 condition were variable, with participants selecting several erroneous diagnoses, including hypochondriacal disorder (21.6%), OCD (15.7%), undifferentiated somatoform disorder (7.8%), and somatization disorder (5.9%). In the second vignette, no differences in accuracy were observed between the ICD-11 and ICD-10 conditions; the correct diagnosis was made by the overwhelming majority of participants in both groups [χ_2 (1) = 0.001, $p = .97$].

Research Question 3: OCRD with limited or no insight *versus* Delusional Disorder

Some patients with OCRD have limited or no insight about the true nature of their disorder-related beliefs. The ICD-11 guidelines include a qualifier intended to provide clinicians with a means of indicating the level of insight, which was tested in two comparisons. In comparison 8 (Table 5), participants were presented with a vignette depicting an individual with OCD who demonstrated no insight and another vignette depicting an individual presenting with

delusional thinking about being infected by an animal bite (without repetitive behaviors) characteristic of delusional disorder. For the OCD vignette, no difference was found in accuracy between the two classifications [χ_2 (1) = 0.24, p = .63], with the majority of the participants in both conditions correctly diagnosing the patient described in the vignette with OCD. Nonetheless, fewer participants in the ICD-11 condition (12.7%) erroneously diagnosed delusional disorder as compared to those in the ICD-10 condition (23.3%). With respect to the second vignette, no difference in performance was found between classifications [χ_2 (1) = 0.03, p = .86]. Most participants in both conditions (59.5% in ICD-11 and 64.1% in ICD-10) erroneously applied a hypochondriasis diagnosis.

Comparison 9 (Table 5) involved a vignette describing an individual presenting with body dysmorphic disorder with no insight as well as the same delusional disorder vignette used in comparison 8. Participants in the ICD-11 condition correctly assigned a body dysmorphic disorder diagnosis (94.4%) despite the presence of delusion-like thinking, and significantly outperformed participants in the ICD-10 condition [χ_2 (1) = 39.61, p < .001]. In contrast, a significant proportion (27.0%) of participants in the ICD-10 condition misdiagnosed the patient as having a diagnosis of hypochondriacal disorder rather than correctly assigning ICD-10 delusional disorder. Results for the second vignette were similar as for comparison 8 (Table 5).

In addition to comparisons 8 and 9, the two other levels of insight were embedded in vignettes depicting OCD and body dysmorphic disorder. Table 6 shows the frequency of participants' insight qualifier ratings when presented with OCD and body dysmorphic disorder vignettes with various levels of insight. Although most participants were able to accurately apply the no insight qualifier when presented with a corresponding case vignette of body dysmorphic disorder, participants had much greater difficulty differentiating between fair to good insight and

poor insight.

Research Question 4: Effects of ICD-11 Brief Conceptual Training

Two-way chi-square statistics were conducted for each of the paired-vignette comparisons between participants who received the brief training and those in the ICD-11 condition without the training. No statistically significant differences were found between the brief training and no training conditions for any of the vignette comparisons (Table 7), indicating that participants who were asked to review the training slides performed similarly to those without such exposure. As such, data from the ICD-11 brief training and ICD-11 no training conditions were combined for all analyses reported above.

Discussion

This article presents the results of a case-controlled vignette study evaluating changes to the classification of OCRD that, at the time of the study, had been proposed for the Mental Behavioural and Neurodevelopmental Disorders chapter of WHO's ICD-11. Clinicians randomized to the ICD-11 condition generally robustly outperformed those using ICD-10 guidelines in selecting the correct diagnosis. We also found that clinicians randomized to the ICD-11 condition were more accurate in differentiating newly introduced OCRD from each other and from OCD, the prototypical disorder for the grouping. Results were mixed when clinicians used guidelines to make clinical judgments differentiating OCRD from disorders sharing clinical features but classified in other groupings. In particular, clinicians had some difficulty differentiating certain presentations of OCD from generalized anxiety disorder and depression. With respect to assigning a level of insight to ICD-11 OCRD, clinicians were able to correctly and consistently assign the no insight qualifier to corresponding case vignettes and to differentiate these from delusional disorder but had difficulty discriminating fair to good insight

from poor insight. Findings also suggest that a brief training focusing on the rationale for introducing an OCRD grouping to ICD-11 did not result in a more accurate application of the guidelines to case material. A more detailed discussion of each of these findings is provided below, including a description of additional changes made to the guidelines prior to publication based on the results of this field study.

Research Question 1: Newly Introduced OCRD Diagnostic Categories

Participants in the ICD-11 condition consistently outperformed those in the ICD-10 condition in accurately assigning the correct diagnoses for vignettes depicting phenomenology associated with newly introduced OCRD. These results suggest that despite the novelty of the OCRD grouping, the ICD-11 guidelines outperform ICD-10 in assisting clinicians in correctly diagnosing cases and differentiating these from each other and from OCD.

With respect to body dysmorphic disorder, in addition to determining whether participants could identify a positive case of the disorder, we investigated whether the ICD-11 guidelines provided sufficient guidance to differentiate body dysmorphic disorder from a subthreshold case. Although body dysmorphic disorder is often underdiagnosed and undertreated (Zimmerman and Mattia, 1998), body dissatisfaction is very common (e.g., Rief et al., 2006) and usually not sufficiently severe to warrant clinical attention. Even though the ability to correctly assign a label of ‘no diagnosis’ to the subthreshold case was not significantly different across the two ICD conditions, 20.8% of participants in the ICD-11 condition made a false positive diagnosis of body dysmorphic disorder for the subthreshold case. These data prompted further examination of the essential features of the disorder endorsed by participants erroneously selecting a body dysmorphic disorder diagnosis. This analysis revealed that when a single incident of social avoidance is described, most participants interpreted preoccupation with a

perceived flaw in a body part to be clinically significant. Therefore, the final guidelines for body dysmorphic disorder have been revised to reflect a stricter threshold that requires repeated attempts at social avoidance, serving to more clearly differentiate body dysmorphic disorder from subthreshold body dissatisfaction. Participants in the ICD-10 condition may have been more accurate in assigning 'no diagnosis' because the threshold for ICD-10 hypochondriasis, which includes body dysmorphic disorder, is higher, requiring persistent preoccupation with a presumed deformity or disfigurement and persistent refusal to accept reassurance from several doctors that there is no abnormality.

Another comparison explicitly examined the ability of participants to differentiate body dysmorphic disorder from hypochondriasis. In ICD-10, body dysmorphic disorder is subsumed as a form of hypochondriacal disorder, whereas in ICD-11 it is conceptualized as a separate disorder. Results demonstrated that participants using ICD-11 outperformed those using ICD-10[1] and support the introduction of body dysmorphic disorder as a single diagnosis.

Research Question 2: Differentiating OCRD from Disorders with Similar Features

Due to some phenomenological overlap of OCRD with other disorders, the guidelines were tested to ensure that clinicians are able to differentiate OCRD from other disorders with closely related clinical features. For example, anxiety is often, though not exclusively, a central emotion experienced by those with an OCRD, particularly OCD and hypochondriasis. Similarly, rumination characteristic of a depressive episode and worry characteristic of generalized anxiety disorder bear resemblance to obsessions, mental compulsions and preoccupations associated with

[1] In ICD-10 Hypochondriacal disorder is meant to be diagnosed when a patient is focused on a bodily flaw but does not display delusional thinking. If delusional thinking is present the correct ICD-10 diagnosis is Delusional disorder. In the present study, the correct ICD-10 diagnosis depended on the level of insight displayed by the patient depicted in the vignette. Despite this, participants in the ICD-10 conditions performed significantly worse that their ICD-11 counterparts.

OCRD. As such, comparisons were tested to examine the ability of clinicians to use the diagnostic guidelines to effectively differentiate OCD from depressive episode, OCD from generalized anxiety disorder, olfactory reference disorder from social anxiety disorder, and hypochondriasis from bodily distress disorder.

Differentiating mental rituals from rumination in depression. Since the publication of ICD-10, evidence has accrued showing that compulsions in OCD can include covert (mental) repetitive behaviors (Foa et al., 1995) and is now reflected in the ICD-11 guidelines. Participants using both classifications accurately diagnosed OCD for a vignette of a patient exclusively presenting with mental rituals. Responses to the follow up questions revealed that those incorrectly endorsing GAD or depressive episode using ICD-11 did not consider repetitive mental acts employed by the patient specifically to neutralize intrusive thoughts to be compulsions. Participants in the ICD-10 condition may have performed better than those in the ICD-11 condition in identifying ruminations as consistent with a depressive episode mental rituals are not a feature of OCD in the ICD-10 guidelines. To assist clinicians in understanding the concept of mental rituals in OCD, the final ICD-11 guidelines were revised to provide more concrete clinical examples of mental compulsions in OCD. It is also important to note that the distinction among obsessions, mental rituals, and ruminations is clinically challenging with real patients and this is reflected in participants' responses to standardized vignettes.

Differentiating worry characteristic of Generalized Anxiety Disorder from obsessions and mental compulsions in OCD. The ability of participants to accurately discern the boundary between OCD and generalized anxiety disorder was evaluated because of the introduction of the concept of worry as a central characteristic of generalized anxiety disorder (Borkovec, 1985), and its potential for confusion with both obsessions and mental compulsions in OCD.

Participants in the ICD-11 condition were significantly more likely to misidentify worry as a form of obsession (40.9% of the sample erroneously assigned a diagnosis of OCD to a generalized anxiety disorder vignette in the ICD-11 condition, as compared to 31.9% in the ICD-10 condition). Follow-up questions indicated that participants interpreted non-repetitive safety behaviors and reassurance seeking common to generalized anxiety disorder (Beesdo-Baum et al., 2012) as compulsions. Guidelines were revised to include greater detail in both the OCRD and anxiety and fear-related disorders groupings distinguishing these phenomena, particularly emphasizing that compulsions in OCD are typically performed in response to intrusive and unwanted thoughts. While it is relatively straightforward to differentiate prototypical OCD from prototypical generalized anxiety disorder, in practice it may be extremely difficult to distinguish between certain presentations of OCD and generalized anxiety disorder (e.g., an individual with realistic concerns about contamination and illness, and repeated reassurance-seeking rather than washing). It is also important to underscore that the close phenomenological nature of worry and obsessions/mental rituals made this vignette pair extremely challenging.

Differentiating Olfactory Reference Disorder from Social Anxiety Disorder. Comparison 9 examined whether ICD-11 guidelines improve detection and differentiation of olfactory reference disorder from social anxiety disorder. This distinction is important because self-consciousness and anxiety about perceived body odor in olfactory reference disorder may be manifested in social avoidance. This should be distinguished from social anxiety disorder, where the fear of negative evaluation is related to the individual's concerns about their behavior or manifest signs of anxiety. The results provide unequivocal support for the improvement afforded by the ICD-11 guidelines. Participants in the ICD-10 condition assigned a variety of diagnostic labels to the olfactory reference disorder vignette including hypochondriasis, OCD, somatization

disorder, depressive episode, and delusional disorder. This is consistent with the literature, which emphasizes widespread misdiagnosis and inappropriate treatment of olfactory reference disorder in the past (Feusner, Phillips & Stein, 2010).

Differentiating Hypochondriasis from Bodily Distress Disorder. In ICD-11, hypochondriasis is classified as an OCRD and cross-listed in the anxiety and fear-related disorders rather than as a somatoform disorder (bodily distress disorder in ICD-11), in part because somatic symptoms are not an essential feature of hypochondriasis (van den Heuvel et al., 2014). Furthermore, in contrast to bodily distress disorder, reassurance and appropriate medical examination is typically transiently effective in allaying fears in patients with hypochondriacal concerns (Creed and Gureje, 2012). We tested this novel conceptualization and determined that participants using either ICD-10 or ICD-11 were equally able to correctly detect and differentiate hypochondriasis from bodily distress disorder. However, since the equivalent of bodily distress disorder can be captured with one of two correct ICD-10 diagnostic categories, namely undifferentiated somatoform disorder and persistent somatoform pain disorder, ICD-11 simplifies the diagnostic landscape.

Research Question 3: OCRD with limited or no insight *versus* Delusional Disorder

Patients with OCRD experience different degrees of insight about their disorder-related beliefs, sometimes appearing delusional. The proportion of individuals exhibiting no insight varies by the OCRD; such that it is relatively uncommon in OCD (Eisen and Rasmussen, 1993) except among youth (Selles et al., 2019), present in nearly half of those with BDD (Phillips et al., 1997; Veale et al., 1996), and up to 85% in olfactory reference disorder (Phillips and Menard, 2011; Prazeres et al., 2010). Distinguishing between no insight OCRD and a frank delusional disorder has important treatment implications (O'Dwyer and Marks, 2000; Veale and Matsunaga, 2014;

Wilhelm et al., 2014). In contrast to a psychotic disorder, the patients presenting no insight in OCRD often respond to high doses of serotonin reuptake inhibitors, without the need for dopamine antagonists that carry greater risk for serious side effects. Similarly, exposure-based psychological treatments are effective in OCRD including in youth with poor insight (Selles et al., 2019) but there is no evidence that they are effective for treating psychotic disorders. In order to be able to document the degree of insight, ICD-11 includes a qualifier with three distinct levels.

Although clinicians using the ICD-11 guidelines were significantly more accurate in differentiating delusional disorder from OCRD with no insight, as compared to ICD-10, they had difficulties consistently applying the qualifier to OCD and BDD. Whereas vignettes depicting individuals with OCRD with no insight were correctly identified by 85 - 90% of participants, discrimination between the fair to good and poor insight was at chance levels (Table 6). On the basis of these data, the insight qualifier has been condensed to two distinct levels, with fair to good insight and with poor to absent insight. The revised version covers the range of insight observed in OCRD and provides a category that captures delusional thinking that is fully explained by the OCRD pathology. Furthermore, definitions provided for two levels of insight articulate more precise disorder-specific manifestations. These results call in to question whether the insight specifier in DSM-5, which is defined by three separate levels, can be reliably applied.

Research Question 4: Effects of ICD-11 Brief Conceptual Training

Notwithstanding supportive evidence for an OCRD grouping, there remains some controversy about the separability of OCRD from anxiety and fear-related disorders, as well as other disorder groupings (e.g., Storch et al., 2008). Furthermore, clinicians' natural taxonomies do not include an OCRD grouping (Reed et al., 2013). Therefore, a brief training on the rationale for including

an ICD-11 OCRD grouping was included to examine whether this would improve application of ICD-11 guidelines to case vignettes. The brief training focusing on the conceptual basis for the ICD-11 OCRD grouping did not affect accuracy. This may have been because the brief training did not provide additional information relevant to the application of the guidelines beyond the guidelines themselves, or because of a ceiling effect given that the accuracy of ratings in the ICD-11 without brief training condition were already quite high, perhaps due to the direct correspondence of some of the vignettes to new ORCD categories. Taken together with the fact that participants in the ICD-11 group performed close to ceiling without prior training, this finding suggests that the guidelines, which include a brief description of the rationale for the grouping, are sufficient for understanding the rationale of the OCRD grouping.

Limitations

The specific research questions addressed by the present field study were generated by the Working Group and the WHO Secretariat on the basis of proposed changes from ICD-10 to ICD-11 expected to have the greatest impact on clinical practice. This study was not able to examine every conceptual change proposed for the ICD-11. Therefore, despite the overall results suggesting that ICD-11 produces more accurate application of the guidelines as compared to ICD-10, it may not be the case for all proposed changes. Second, the case vignette methodology prioritizes internal over external validity, and is intended as a first step in evaluating guidelines intended for clinical practice though results of such studies do concord with clinician decision-making with patients (Evans et al., 2015). Participants in this study were part of a volunteer network specifically interested in the ICD-11, and were on average highly trained and quite professionally experienced, which may limit the generalizability of the findings to other groups of classification users. Finally, we decided to collapse the results across all languages in which

the study was conducted. Although there were minor differences across languages, none impacted the overall pattern of results presented here. Nonetheless, global and cross-cultural applicability cannot be assumed and should be further examined.

Conclusion

Overall, the results of this study indicate that the proposed ICD-11 diagnostic guidelines for OCRD afford significant improvement over the corresponding ICD-10 diagnostic guidelines. Although there is some controversy in the literature about the validity of the OCRD grouping (e.g., Abramowitz & Jacoby, 2015), our hope is that introduction of the OCRD grouping will be beneficial to clinicians and researchers leading to measurable improvements in detection and treatment of these impairing disorders. Clinicians were able to readily apply the novel concepts involved in a major structural change in the organization of the ICD-11 without a need for specific training on the rationale for the OCRD grouping. The findings of the present study suggest that improved accuracy in ICD-11 over ICD-10 was primarily attributable to the introduction of new diagnostic categories that reflect important clinical presentations. The field study also assisted to identifying areas where the guidelines were not operating as intended, therefore facilitating further revisions prior to finalization and publication of the guidelines. Specifically, the differentiation of OCRD from other diagnoses with similar clinical features resulted in further clarification and refinement. Results also suggested that a qualifier intended to characterize the level of insight in OCRD is difficult to assess as three separate categories but significantly improves the differentiation of OCRD with no insight from Delusional disorder. Based on these findings, the final guidelines for OCRD were redrafted to include only two levels of insight: ‘with poor to absent insight’ and ‘with fair to good insight’. The new ICD-11 guidelines are expected to improve detection of these relatively common disorders, as well as to

encourage further research efforts to enhance their diagnostics, phenomenology and treatment.

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References

1. Abramowitz, J. S., & Jacoby, R. J. (2015) Obsessive-compulsive and related disorders: A critical review of the new diagnostic class. *Annual Review of Clinical Psychology*, *11*, 165-186. https://doi.org/10.1146/annurev-clinpsy-032813-153713
2. Beesdo-Baum, K., Jenjahn, E., Höfler, M., Lueken, U., Becker, E. S., & Hoyer, J. (2012). Avoidance, safety behavior, and reassurance seeking in generalized anxiety disorder. *Depression and Anxiety*, *29*(11), 948–957. https://doi.org/10.1002/da.21955
3. Bienvenu, O. J., Samuels, J. F., Wuyek, L. A., Liang, K.-Y., Wang, Y., Grados, M. A., … Nestadt, G. (2012). Is obsessive–compulsive disorder an anxiety disorder, and what, if any, are spectrum conditions? A family study perspective? *Psychological Medicine*, *42*(1), 1–13. https://doi.org/10.1017/S0033291711000742
4. Borkovec, T. D. (1985). Worry: A potentially valuable concept. *Behaviour Research and Therapy*, *23*(4), 481–483. https://doi.org/10.1016/0005-7967(85)90178-0
5. Creed, F., & Gureje, O. (2012). Emerging themes in the revision of the classification of somatoform disorders. *International Review of Psychiatry*, *24*(6), 556–567. https://doi.org/10.3109/09540261.2012.741063
6. Eisen, J. L., & Rasmussen, S. A. (1993). Obsessive compulsive disorder with psychotic features. *The Journal of Clinical Psychiatry*, *54*(10), 373–379. Retrieved from http://www.ncbi.nlm.nih.gov/pubmed/8262879
7. Evans, S. C., Reed, G. M., Roberts, M. C., Esparza, P., Watts, A. D., Correia, J. M., … Saxena, S. (2013). Psychologists' perspectives on the diagnostic classification of mental disorders: Results from the WHO-IUPsyS Global Survey. *International Journal of Psychology*, *48*(3), 177–193. https://doi.org/10.1080/00207594.2013.804189

8. Evans, S. C., Roberts, M. C., Keeley, J. W., Blossom, J. B., Amaro, C. M., Garcia, A. M., … Reed, G. M. (2015). Vignette methodologies for studying clinicians' decision-making: Validity, utility, and application in ICD-11 field studies. *International Journal of Clinical and Health Psychology*, *15*(2), 160–170. https://doi.org/10.1016/j.ijchp.2014.12.001
9. Fineberg, N. A., Chamberlain, S. R., Goudriaan, A. E., Stein, D. J., Vanderschuren, L. J. M. J., Gillan, C. M., … Potenza, M. N. (2014). New developments in human neurocognition: Clinical, genetic, and brain imaging correlates of impulsivity and compulsivity. *CNS Spectrums*, *19*(1), 69–89. https://doi.org/10.1017/S1092852913000801
10. Fineberg, N. A., Sharma, P., Sivakumaran, T., Sahakian, B., Chamberlain, S. R., & Chamberlain, S. (2007). Does obsessive-compulsive personality disorder belong within the obsessive-compulsive spectrum? *CNS Spectrums*, *12*(6), 467–482. https://doi.org/10.1017/s1092852900015340
11. First, M. B., Pincus, H. A., Levine, J. B., Williams, J. B. W., Ustun, B., & Peele, R. (2004). Clinical utility as a criterion for revising psychiatric diagnoses. *American Journal of Psychiatry*, *161*(6), 946–954. https://doi.org/10.1176/appi.ajp.161.6.946
12. First, M. B., Reed, G. M., Hyman, S. E., & Saxena, S. (2015). The development of the ICD-11 Clinical Descriptions and Diagnostic Guidelines for Mental and Behavioural Disorders. World Psychiatry, *14*(1), 82–90. https://doi.org/10.1002/wps.20189
13. Feusner JD, Phillips KA, Stein DJ. Olfactory reference syndrome: issues for DSM-V. Depress Anxiety. 2010 Jun;27(6):592-9. doi: 10.1002/da.20688.
14. Foa, E. B., Kozak, M. J., Goodman, W. K., Hollander, E., Jenike, M. A., & Rasmussen, S. A. (1995). DSM-IV field trial: obsessive-compulsive disorder. *American Journal of Psychiatry*, *152*(1), 90–96. https://doi.org/10.1176/ajp.152.1.90
15. Fontenelle, L. F., Mendlowicz, M. V., & Versiani, M. (2006). The descriptive epidemiology of obsessive–compulsive disorder. *Progress in Neuro-Psychopharmacology and Biological Psychiatry*, *30*(3), 327–337. https://doi.org/10.1016/j.pnpbp.2005.11.001
16. Grant, J. E., Kim, S. W., & Crow, S. J. (2001). Prevalence and clinical features of body dysmorphic disorder in adolescent and adult psychiatric inpatients. *The Journal of Clinical Psychiatry*, *62*(7), 517–522. https://doi.org/10.4088/jcp.v62n07a03
17. Gureje, O., Üstün, T. B., & Simon, G. E. (1997). The syndrome of hypochondriasis: A cross-national study in primary care. *Psychological Medicine*, *27*(5), 1001–1010. https://doi.org/10.1017/S0033291797005345
18. Hirschtritt ME, Bloch MH, Mathews CA. Obsessive-Compulsive Disorder: Advances in Diagnosis and Treatment. JAMA. 2017 Apr 4;317(13):1358-1367. https://doi.org/10.1001/jama.2017.2200
19. International Advisory Group for the Revision of ICD-10 Mental and Behavioural Disorders (2011). A conceptual framework for the revision of the ICD-10 classification of mental and behavioural disorders. *World Psychiatry*, *10*(2), 86–92. https://doi.org/10.1002/j.2051-5545.2011.tb00022.x
20. Keeley, J. W., Reed, G. M., Roberts, M. C., Evans, S. C., Medina-Mora, M. E., Robles, R., … Saxena, S. (2016). Developing a science of clinical utility in diagnostic classification systems: Field study strategies for ICD-11 mental and behavioral disorders. *American Psychologist*, *71*(1), 3–16. https://doi.org/10.1037/a0039972
21. Markarian, Y., Larson, M. J., Aldea, M. A., Baldwin, S. A., Good, D., Berkeljon, A., … McKay, D. (2010). Multiple pathways to functional impairment in obsessive–compulsive disorder. *Clinical Psychology Review*, *30*(1), 78–88.

https://doi.org/10.1016/j.cpr.2009.09.005
22. McKay, D., Sookman, D., Neziroglu, F., Wilhelm, S., Stein, D. J., Kyrios, M., … Veale, D. (2015). Efficacy of cognitive-behavioral therapy for obsessive–compulsive disorder. *Psychiatry Research*, *225*(3), 236–246. https://doi.org/10.1016/J.PSYCHRES.2014.11.058
23. Milad, M. R., & Rauch, S. L. (2012). Obsessive-compulsive disorder: beyond segregated cortico-striatal pathways. *Trends in Cognitive Sciences*, *16*(1), 43–51. https://doi.org/10.1016/j.tics.2011.11.003
24. Monzani, B., Rijsdijk, F., Harris, J., & Mataix-Cols, D. (2014). The structure of genetic and environmental risk factors for dimensional representations of DSM-5 obsessive-compulsive spectrum disorders. *JAMA Psychiatry*, *71*(2), 182. https://doi.org/10.1001/jamapsychiatry.2013.3524
25. Neziroglu, F., McKay, D., & Yaryura-Tobias, J. A. (2000). Overlapping and distinctive features of hypochondriasis and obsessive-compulsive disorder. *Journal of Anxiety Disorders*, *14*(6), 603–614. https://doi.org/10.1016/s0887-6185(00)00053-0
26. Nikolaus, S., Antke, C., Beu, M., & Müller, H.-W. (2010). Cortical GABA, striatal dopamine and midbrain serotonin as the key players in compulsive and anxiety disorders: Results from in vivo imaging studies. *Reviews in the Neurosciences*, *21*(2), 119–139. https://doi.org/10.1515/revneuro.2010.21.2.119
27. Nordsletten, A. E., Reichenberg, A., Hatch, S. L., de la Cruz, L. F., Pertusa, A., Hotopf, M., & Mataix-Cols, D. (2013). Epidemiology of hoarding disorder. *British Journal of Psychiatry*, *203*(6), 445–452. https://doi.org/10.1192/bjp.bp.113.130195
28. O'Dwyer, A. M., & Marks, I. (2000). Obsessive-compulsive disorder and delusions revisited. *The British Journal of Psychiatry*, *176*, 281–284. https://doi.org/10.1192/bjp.176.3.281
29. Phillips, K. A., Hollander, E., Rasmussen, S. A., Aronowitz, B. R., DeCaria, C., & Goodman, W. K. (1997). A severity rating scale for body dysmorphic disorder: Development, reliability, and validity of a modified version of the Yale-Brown Obsessive Compulsive Scale. *Psychopharmacology Bulletin*, *33*(1), 17–22. Retrieved from http://www.ncbi.nlm.nih.gov/pubmed/9133747
30. Phillips, K. A., & Menard, W. (2011). Olfactory reference syndrome: Demographic and clinical features of imagined body odor. *General Hospital Psychiatry*, *33*(4), 398–406. https://doi.org/10.1016/j.genhosppsych.2011.04.004
31. Prazeres, A. M., Fontenelle, L. F., Mendlowicz, M. V., de Mathis, M. A., Ferrão, Y. A., de Brito, N. F. C., … Miguel, E. C. (2010). Olfactory reference syndrome as a subtype of body dysmorphic disorder. *The Journal of Clinical Psychiatry*, *71*(1), 87–89. https://doi.org/10.4088/JCP.09l05040
32. Rachman, S. (2012). Health anxiety disorders: A cognitive construal. *Behaviour Research and Therapy*, *50*(7–8), 502–512. https://doi.org/10.1016/j.brat.2012.05.001
33. Reed, G.M., Sharan, P., Rebello, T.J., Keeley, J.W., Medina-Mora, M.E., Gureje, O., Ayuso-Mateos, J.L., Kanba, S., Khoury, B., Kogan, C.S., Krasnov, V.N., Maj, M., Mari, J. de J., Stein, D.S., Zhao, M., Akiyama, T., Andrews, H.F., Asevedo, E., Cheour, M., Domínguez-Martínez, T., El-Khoury, J., Fiorillo, A., Grenier, J., Gupta, N., Kola, L., Kulygina, M., Leal-Leturia, I., Luciano, M., Lusu, B., Martínez-López, J.N.I., Matsumoto, C., Onofa, L.U., Paterniti, S., Purnima, S., Robles, R., Sahu, M.K., Sibeko, G., Zhong, N., First, M.B., Gaebel, W., Lovell, A.M., Maruta, T., Roberts, M.C., & Pike, K.M. (2018a). The ICD-11 developmental field study of reliability of diagnoses of high-burden mental disorders: Results among adult patients in mental health settings of 13 countries. World Psychiatry,

17, 174-186. https://doi.org/10.1002/wps.20524
34. Reed, G. M., Keeley, J. W., Rebello, T. J., First, M. B., Gureje, O., Ayuso-Mateos, J. L., … Medina-Mora, M. E. (2018b). Clinical utility of ICD-11 diagnostic guidelines for high-burden mental disorders: Results from mental health settings in 13 countries. *World Psychiatry*, *17*(3), 306–315. https://doi.org/10.1002/wps.20581
35. Reed, G. M., Rebello, T. J., Pike, K. M., Medina-Mora, M. E., Gureje, O., Zhao, M., … Saxena, S. (2015). WHO's Global Clinical Practice Network for mental health. *The Lancet Psychiatry*, *2*(5), 379–380. https://doi.org/10.1016/S2215-0366(15)00183-2
36. Reed, G. M., Roberts, M. C., Keeley, J., Hooppell, C., Matsumoto, C., Sharan, P., … Medina-Mora, M. E. (2013). Mental health professionals' natural taxonomies of mental disorders: Implications for the clinical utility of the ICD-11 and the DSM-5. *Journal of Clinical Psychology*, *69*(12), 1191–1212. https://doi.org/10.1002/jclp.22031
37. Rief, W., Buhlmann, U., Wilhelm, S., Borkenhagen, A., & Brähler, E. (2006). The prevalence of body dysmorphic disorder: a population-based survey. *Psychological Medicine*, *36*(6), 877–885. https://doi.org/10.1017/s0033291706007264
38. Roberts, M. C., Reed, G. M., Medina-Mora, M. E., Keeley, J. W., Sharan, P., Johnson, D. K., … Saxena, S. (2012). A global clinicians' map of mental disorders to improve ICD-11: Analysing meta-structure to enhance clinical utility. *International Review of Psychiatry*, *24*(6), 578–590. https://doi.org/10.3109/09540261.2012.736368
39. Robins, E., & Guze, S. B. (1970). Establishment of diagnostic validity in psychiatric illness: Its application to schizophrenia. *American Journal of Psychiatry*, *126*(7), 983–987. https://doi.org/10.1176/ajp.126.7.983
40. Selles RR, Højgaard DRMA, Ivarsson T, Thomsen PH, McBride NM, Storch EA, Geller D, Wilhelm S, Farrell LJ, Waters AM, Mathieu S, Stewart SE (2019): Avoidance, Insight, Impairment Recognition Concordance and Cognitive-Behavioral Therapy Outcomes in Pediatric Obsessive-Compulsive Disorder. *Journal of the American Academy of Child & Adolescent Psychiatry*. Advance online publication. https://doi.org/10.1016/j.jaac.2019.05.030
41. Stein, D. J., Kogan, C. S., Atmaca, M., Fineberg, N. A., Fontenelle, L. F., Grant, J. E., … Reed, G. M. (2016). The classification of Obsessive–Compulsive and Related Disorders in the ICD-11. *Journal of Affective Disorders*, *190*, 663–674. https://doi.org/10.1016/J.JAD.2015.10.061
42. Storch, E. A., Abramowitz, J., & Goodman, W. K. (2008). Where does obsessive–compulsive disorder belong in DSM-V? *Depression and Anxiety*, *25*(4), 336–347. https://doi.org/10.1002/da.20488
43. Thomas, E., du Plessis, S., Chiliza, B., Lochner, C., & Stein, D. (2015). Olfactory reference disorder: Diagnosis, epidemiology and management. *CNS Drugs*, *29*(12), 999–1007. https://doi.org/10.1007/s40263-015-0292-5
44. van den Heuvel, O. A., Veale, D., & Stein, D. J. (2014). Hypochondriasis: considerations for ICD-11. *Revista Brasileira de Psiquiatria*, *36 Suppl 1*, 21–27. https://doi.org/10.1590/1516-4446-2013-1218
45. Veale, D., Boocock, A., Gournay, K., Dryden, W., Shah, F., Willson, R., & Walburn, J. (1996). Body dysmorphic disorder: A survey of fifty cases. *British Journal of Psychiatry*, *169*(2), 196–201. https://doi.org/10.1192/bjp.169.2.196
46. Veale, D., Gledhill, L. J., Christodoulou, P., & Hodsoll, J. (2016). Body dysmorphic disorder in different settings: A systematic review and estimated weighted prevalence. *Body Image*,

18, 168–186. https://doi.org/10.1016/J.BODYIM.2016.07.003
47. Veale, D., & Matsunaga, H. (2014). Body dysmorphic disorder and olfactory reference disorder: Proposals for ICD-11. *Revista Brasileira de Psiquiatria*, *36 Suppl 1*, 14–20. https://doi.org/10.1590/1516-4446-2013-1238
48. Weissman, M. M. (1998). Cross-national epidemiology of obsessive-compulsive disorder. *CNS Spectrums*, *3*(S1), 6–9. https://doi.org/10.1017/S1092852900007136
49. Weissman, M. M., Bland, R. C., Canino, G. J., Greenwald, S., Hwu, H. G., Lee, C. K., … Wickramaratne, P. J. (1994). The cross national epidemiology of obsessive compulsive disorder. The Cross National Collaborative Group. *The Journal of Clinical Psychiatry*, *55 Suppl*, 5–10. Retrieved from http://www.ncbi.nlm.nih.gov/pubmed/8077177
50. WHO. (1992). *The ICD-10 Classification of mental and behavioural disorders : Clinical descriptions and diagnostic guidelines*. Geneva, Switzerland: World Health Organization.
51. WHO. (2019). *The International Classification of Diseases, 11th revision*. Geneva, Switzerland: World Health Organization.
52. WHO. (2014). *Constitution of the World Health Organization. World Health Organization basic documents, 48th ed.* Geneva, Switzerland: World Health Organization.
53. Wilhelm, S., Phillips, K. A., Didie, E., Buhlmann, U., Greenberg, J. L., Fama, J. M., … Steketee, G. (2014). Modular cognitive-behavioral therapy for body dysmorphic disorder: A randomized controlled trial. *Behavior Therapy*, *45*(3), 314–327. https://doi.org/10.1016/j.beth.2013.12.007
54. Zimmerman, M., & Mattia, J. I. (1998). Body dysmorphic disorder in psychiatric outpatients: Recognition, prevalence, comorbidity, demographic, and clinical correlates. *Comprehensive Psychiatry*, *39*(5), 265–270. https://doi.org/10.1016/s0010-440x(98)90034-7

Table 1 Case vignettes with their accurate diagnoses according to either the ICD-10 or ICD-11 diagnostic guidelines

Vignette number	**Key features of case vignette**	**Accurate diagnosis according to the ICD-11 guidelines**	**ICD-11 Insight qualifier level**	**Accurate diagnosis according to the ICD-10 guidelines**
1A	Case of OCD with hoarding rituals used to neutralize obsessions	OCD	No insight	OCD
1B	Hoarding of unneeded objects with distress with notion of discarding. Hoarding not performed to neutralize obsessions	Hoarding disorder	No insight	OCD Other OCD
2A	Case of Body Dysmorphic Disorder, perceived flaw is uneven skin tone	Body dysmorphic disorder	Fair to good insight	Hypochondriacal disorder
2B	Case of Hypochondriacal Disorder, individual preoccupied by skin cancer	Hypochondriasis	Fair to good insight	Hypochondriacal disorder
3A	Subthreshold case of preoccupation with body appearance, concern is about abdominal shape with no repetitive checking	No diagnosis	Not applicable	Hypochondriacal disorder (subthreshold according to ICD-11 guidelines)
4A	Obsessions focus on personal failings accompanied by mental rituals used to neutralize intrusive thoughts	OCD	Poor insight	OCD
4B	Depressive symptoms with prominent ruminations. No rituals present	Depressive episode	Not applicable	Depressive episode
5A	Obsessions focus on possibility of	OCD	Fair to good insight	OCD

	having caused a road accident. Compulsions include overt repetitive checking			
5B	Case of GAD with current worries focused on safety of wife. Safety behaviours include calling wife repeatedly but behavior does not meet definitional requirements for compulsions	Generalized anxiety disorder	Not applicable	Generalized anxiety disorder
6B	Persistent delusional concerns about being infected by an animal bite. No repetitive behaviors.	Delusional disorder	Not applicable	Delusional disorder
6C	Preoccupation with small head size accompanied by repetitive checking behaviors. Unrelenting conviction that head is too small.	Body dysmorphic disorder	No insight	Delusional disorder
7A	Hypochondriacal preoccupations about having skin cancer. Repetitive checking of skin.	Hypochondriasis	Fair to good insight	Hypochondriacal disorder
7B	Preoccupation with several bodily symptoms that are bothersome	Bodily distress disorder	Not applicable but description is matched with level of insight described in 7A	Undifferentiated somatoform disorder *or* Persistent somatoform pain disorder
8A	Preoccupation with perceived foul body odor. Repetitive behaviours to mask odor. Anxiety symptoms about body odor are present	Olfactory reference disorder	Fair to good insight	Social phobias

8B	Focus of apprehension is on visible signs of anxiety in social situations accompanied by concerns about negative social judgement. Avoidance of social situations present	Social anxiety disorder	Not applicable but description is matched with level of insight described in 8A	Social phobias

Table 2 *Paired Vignette Comparisons.* Each participant was randomized to one of the following comparisons.

Comparison*	Differential Diagnoses
1	OCD (Vignette 1A) vs. Hoarding Disorder (Vignette 1B)
2	Body Dysmorphic Disorder (Vignette 2A) vs. Hypochondriasis (Vignette 2B)
3	BDD (Vignette 2A) vs. normal preoccupation with a bodily flaw (Vignette 3A)
4	OCD (Vignette 4A) vs. rumination as a symptom of Depressive Episode (Vignette 4B)
5	OCD (Vignette 5A) vs. Generalized Anxiety Disorder (Vignette 5B)
6	Hypochondriasis (Vignette 7A) vs. Bodily Distress Disorder (Vignette 7B)
7	Olfactory Reference Disorder (Vignette 8A) vs. Social Anxiety Disorder (Vignette 8B)
8	OCD (Vignette 1A) vs. Delusional Disorder (Vignette 6B)
9	Body Dysmorphic Disorder (Vignette 6C) vs. Delusional Disorder (Vignette 6B)

Table 3 Participant Demographic Information (N = 1,915)

	English	Spanish	Chinese	Japanese	French	Russian	TOTAL

	n (%)	*n* (%)	n(%)	*n* (%)	n (%)	*n* (%)	*n*
WHO Global Region							
Africa	36 (3.9)	0	0	0	6 (4.1)	0	42
Americas-North	199 (21.3)	1 (0.4)	0	0	4 (2.7)	0	204
Americas-South	43 (4.6)	174 (69.9)	0	0	5 (3.4)	0	222
Eastern Mediterranean	32 (3.4)	0	0	0	16 (10.8)	0	48
Europe	411 (44.0)	74 (29.7)	0	0	117 (79.1)	122 (100)	724
South-East Asia	137 (14.7)	0	0	0	0	0	137
Western Pacific-Asia	9 (1.0)	0	236 (100)	227 (100)	0	0	472
Western Pacific-Oceania	66 (7.1)	0	0	0	0	0	66
Total N	**933**	**249**	**236**	**227**	**148**	**122**	
Male	496 (53.2)	130 (52.2)	150 (63.6)	179 (78.9)	83 (56.1)	71 (58.2)	1109

Female	409 (43.8)	118 (47.4)	86 (36.4)	48 (21.1)	63 (42.6)	51 (41.8)	775
Other	1 (0.1)	1 (0.4)	0	0	0	0	2
Profession							
Medicine	446 (47.8)	91 (36.5)	214 (90.7)	188 (82.8)	87 (57.8)	112 (91.8)	1138
Psychology	287 (30.8)	129 (51.8)	16 (6.8)	29 (12.8)	48 (32.4)	7 (5.7)	516
Counseling	57 (6.1)	3 (1.2)	2 (0.8)	2 (0.9)	1 (0.7)	1 (0.8)	66
Social Work	57 (6.1)	1 (0.4)	1 (0.4)	0	0	0	59
Occupational Therapy	33 (3.5)	5 (2.0)	0	0	2 (1.4)	0	40
Nursing	23 (2.5)	2 (0.8)	0	4 (1.8)	9 (6.1)	0	38
Other*	30 (3.2)	18 (7.2)	3 (1.3)	4 (1.8)	1 (0.7)	2 (1.6)	58
Age	*M* (*SD*) 47.60 (11.32)	*M* (*SD*) 47.70 (11.81)	*M* (*SD*) 42.17 (8.25)	*M* (*SD*) 47.16 (10.14)	*M* (*SD*) 46.28 (11.78)	*M* (*SD*) 45.67 (13.12)	

Years of Experience	*M* (*SD*)	*M* (*SD*)	*M* (*SD*)	*M* (*SD*)	*M* (*SD*)	*M* (*SD*)
	15.40 (10.23)	18.03 (10.32)	16.28 (10.48)	14.75 (9.72)	16.28 (10.48)	19.11 (12.37)

n – number of participants

Note: Other includes: Certified peer support worker (n=3), Sex therapy (n=4), Speech therapy (n=1), the remaining were unspecified (n=22)

Table 4 Possible diagnostic responses by diagnostic system

ICD-10	ICD-11
Obsessive-compulsive disorder	Obsessive-Compulsive Disorder
Other obsessive-compulsive disorder	Body Dysmorphic Disorder
Somatization disorder	Olfactory Reference Disorder
Undifferentiated somatoform disorder	Hypochondriasis
Hypochondriacal disorder	Hoarding Disorder
Persistent somatoform pain disorder	Other Obsessive-Compulsive and Related Disorder
Depressive episode	Depressive Episode
Social phobias	Delusional Disorder
Generalized anxiety disorder	Generalized Anxiety Disorder
Delusional disorder	Social Anxiety Disorder
Anorexia nervosa	Bodily Distress Disorder
Atypical anorexia nervosa	Anorexia Nervosa

Table 5 Scientific questions 1 - 3, vignette comparisons and main results

Scientific question	**Vignette comparison ICD-11 diagnosis**	**Main Results (accuracy, %)**
1. Do the newly introduced ICD-11 categories improve clinicians' accuracy in differentiating OCD, the prototypical disorder of the OCRD grouping, from related phenomena as compared to when ICD-10 guidelines are applied?		
Comparison 1: Does ICD-11 improve accuracy of diagnosis over ICD-10 with the introduction of Hoarding disorder	Vignette 1A: OCD Vignette 1B: ICD-11 Hoarding disorder, OCD or Other OCD	*Vignette 1A* (n = 194) ICD-11: 64.5%, ICD-10: 53.4%, χ^2 (1) = 2.32, *ns*, w = 0.11 *Vignette 1B* (n = 194) ICD-11: 94.2% > ICD-10: 58.9%, χ^2 (1) = 36.78, p < .001, w = 0.43
Comparison 2: Does ICD-11 improve accuracy of diagnosis over ICD-10 with the introduction of Body dysmorphic disorder	Vignette 2A: ICD-11 Body dysmorphic disorder, ICD-10 Hypochondriacal disorder Vignette 2B: ICD-11 Hypochondriasis, ICD-10 Hypochondriacal disorder	*Vignette 2A* (n = 198) ICD-11: 94.1% > ICD-10: 31.6% , χ^2 (1) = 86.93, p < .001, w = 0.66 *Vignette 2B* (n = 198) ICD-11: 88.2%, ICD-10: 84.8%,χ^2 (1) = 0.49, *ns*, w = 0.05
Comparison 3: Does ICD-11 improve accuracy of diagnosis over ICD-10 with the introduction of Body dysmorphic disorder and differentiate from a subthreshold case?	Vignette 2A: ICD-11 BDD, ICD-10 Hypochondriacal disorder Vignette 3A: no diagnosis	*Vignette 2A* (n = 179) ICD-11: 87.5% > ICD-10: 39.0%, χ^2 (1) = 45.70, p < .001, w = 0.51 *Vignette 3A* (n = 179) ICD-11: 62.5% < ICD-10: 78.0%, χ^2 (1) = 4.32, p = .04, w = 0.16
2. Do clinicians more accurately differentiate disorders		

from other related groupings from OCRDs using ICD-11 as compared to ICD-10 guidelines including when insight is poor or absent?		
Comparison 4:	Vignette 4A: OCD Vignette 4B: Depressive episode	*Vignette 4A* (n = 187) ICD-11: 70.0%, ICD-10: 71.6%, χ_2 (1) = 0.06, *ns*, w = 0.02 *Vignette 4B* (n = 187) ICD-11: 81.7% < ICD-10: 92.5%, χ_2 (1) = 4.11, *p* = .04, w = 0.15
Comparison 5:	Vignette 5A: OCD Vignette 5B: Generalized anxiety disorder	*Vignette 5A* (n = 199) ICD-11: 73.2%, ICD-10: 79.2%, χ_2 (1) = 0.87, *ns*, w = 0.07 *Vignette 5B* (n = 199) ICD-11: 40.9% < ICD-10: 56.9%, χ_2 (1) = 4.74, *p* = .03, w = 0.15
Comparison 6:	Vignette 7A: ICD-11 Hypochondriasis, ICD-10 Hypochondriacal disorder Vignette 7B: ICD-11 Bodily Distress Disorder, ICD-10 Undifferentiated somatoform disorder or persistent somatoform pain disorder	*Vignette 7A* (n = 190) ICD-11: 82.9%, ICD-10: 82.8%, χ_2 (1) = 0.00, *ns,* w = 0.04 *Vignette 7B* (n = 190) ICD-11: 76.7%, ICD-10: 76.6%, χ_2 (1) = 0.00, *ns,* w = 0.01
Comparison 7:	Vignette 8A: ICD-11 Olfactory Reference Disorder, ICD-10 Delusional disorder or Social phobias Vignette 8B: ICD-11 Social Anxiety	*Vignette 8A* (n = 189) ICD-11: 91.2% > ICD-10: 39.2%, χ_2 (1) = 57.02, *p* < .001, w = 0.46 *Vignette 8B* (n = 189) ICD-11: 92.0%, ICD-10: 92.2%, χ_2 (1) = 0.00, *ns*, w = 0.00

	Disorder, ICD-10 Social phobias	
3. Do clinicians accurately differentiate the three levels of insight proposed for the ICD-11 OCRD grouping? Furthermore, do clinicians using the ICD-11 guidelines better differentiate case vignettes depicting patients with poor or no insight (i.e., individuals holding beliefs that appear delusional but that are entirely consistent with the symptomatology of an OCRD) from patients with a Delusional disorder when using the ICD-11 as compared to ICD-10 guidelines?		
Comparison 8:	Vignette 1A: OCD Vignette 6B: Delusional disorder	*Vignette 1A* (n = 193) ICD-11: 70.6%, ICD-10: 67.2%, χ_2 (1) = 0.24, *ns,* w = 0.00 *Vignette 6B* (n = 193) ICD-11: 19.8%, ICD-10: 18.8%, χ_2 (1) = 0.03, *ns,* w = 0.00
Comparison 9:	Vignette 6C: ICD-11 Body dysmorphic disorder, ICD-10 Hypochondriacal disorder Vignette 6B: Delusional disorder	*Vignette 6C* (n = 188) ICD-11: 94.4% > ICD-10: 57.1%, χ_2 (1) = 39.61, p < .001, w = 0.55 *Vignette 6B* (n = 188) ICD-11: 22.2%, ICD-10: 22.2%, χ_2 (1) = 0.00, *ns,* w = 0.00

OCD - Obsessive-compulsive disorder

w denotes the effect size for the comparison with w = 0.1 considered a small effect, w = 0.3 a medium effect, and w > 0.5 a large effect.

Table 6 OCRD Insight qualifier results

Frequency of Participant Insight Specifier Ratings for Obsessive-Compulsive Disorder

	Frequency of Rating (%)		
	Fair to Good Insight	Poor Insight	No Insight
Vignette Presented			
With Fair to Good Insight (vignette 5A)	**41.94**	47.31	10.75
With Poor Insight (vignette 4A)	39.76	**49.40**	10.84
With No Insight (vignette 1A)	0.61	9.82	**89.57**

Note: Correct answers are denoted in bold. Overall $\chi^2(4) = 204.38$, $p < .001$; Fair to Good vs. No Insight $\chi^2(2) = 160.60$, $p < .001$; Poor vs. No Insight $\chi^2(2) = 152.26$, $p < .001$; Fair to Good vs. Poor Insight $\chi^2(2) = 0.09$, *ns*

Frequency of Participant Insight Specifier Ratings for Body Dysmorphic Disorder

	Frequency of Rating (%)		
	Fair to Good Insight	Poor Insight	No Insight
Vignette Presented			
With Fair to Good Insight (vignette 2A)	**34.82**	36.61	28.57
With Poor Insight (vignette 10A*)	5.94	**51.49**	42.57
With No Insight (vignette 6C)	3.36	11.76	**84.87**

Note: Correct answers are denoted in bold. Overall $\chi^2(4) = 129.73$, $p < .001$; Fair to Good vs. No Insight $\chi^2(2) = 97.87$, $p < .001$; Poor vs. No Insight $\chi^2(2) = 44.46$, $p < .001$; Fair to Good vs. Poor Insight $\chi^2(2) = 30.47$, $p < .001$

Table 7 Effects of ICD-11 Brief Conceptual Training

χ^2 comparisons between participants who received the brief training and those in the ICD-11 condition without the training

Comparison	Vignette	χ^2 (1)	*p*
1	1A	0.00	*ns*
	1B	0.35	*ns*

2	2A	0.48	*ns*
	2B	0.19	*ns*
3	2A	2.31	*ns*
	3A	2.57	*ns*
4	4A	0.04	*ns*
	4B	0.73	*ns*
5	5A	0.05	*ns*
	5B	0.07	*ns*
6	1A	0.02	*ns*
	6B	0.58	*ns*
7	6C	0.69	*ns*
	6B	0.01	*ns*
8	8A	3.66	*ns*
	8B	0.62	*ns*
9	9A	0.33	*ns*
	9B	0.12	*ns*