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FULL-LENGTH REPORT

Mental health professionals' use of the ICD-11 classification of impulse control disorders and behavioral addictions: An international field study

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ABSTRACT

Background and aims: The ICD-11 chapter on mental, behavioral and neurodevelopmental disorders contains new controversial diagnoses including compulsive sexual behavior disorder (CSBD), intermittent explosive disorder (IED) and gaming disorder. Using a vignette-based methodology, this field study examined the ability of mental health professionals (MHPs) to apply the new ICD-11 diagnostic requirements for impulse control disorders, which include CSBD and IED, and disorders due to addictive behaviors, which include gaming disorder, compared to the previous ICD-10 guidelines. *Methods:* Across eleven comparisons, members of the WHO's Global Clinical Practice Network ($N = 1,090$) evaluated standardized case descriptions that were designed to test key differences between the diagnostic guidelines of ICD-11 and ICD-10. *Results:* The ICD-11 outperformed the ICD-10 in the accuracy of diagnosing impulse control disorders and behavioral addictions in most comparisons, while the ICD-10 was not superior in any. The superiority of the ICD-11 was particularly clear where new diagnoses had been added to the classification system or major revisions had been made. However, the ICD-11 outperformed the ICD-10 only in a minority of comparisons in which mental health professionals were asked to evaluate cases with non-pathological high involvement in rewarding behaviors. *Discussion and Conclusions:* Overall, the present study indicates that the ICD-11 diagnostic requirements represent an improvement over the ICD-10 guidelines. However, additional efforts, such as training programs for MHPs and possible refinements of diagnostic guidance, are needed to avoid over-diagnosis of people who are highly engaged in a repetitive and rewarding behavior but below the threshold for a disorder.

KEYWORDS

compulsive sexual behavior disorder, gambling disorder, gaming disorder, pyromania, kleptomania, intermittent explosive disorder

INTRODUCTION

The World Health Organization's (WHO's) International Classification of Diseases (ICD) is the most widely used diagnostic system for mental disorders worldwide (Reed, Correia, Esparza, Saxena, & Maj, 2011). The Eleventh Revision (ICD-11) was approved by the World Health Assembly in 2019 and is currently in the process of implementation around the world. The ICD-11 chapter on mental, behavioral and neurodevelopmental disorders includes sections on impulse control disorders and disorders due to addictive behaviors that contain some of the most controversial diagnoses in the manual (Reed et al., 2022). This is reflected in passionate discussions about the introduction of disorders such as gaming disorder and compulsive sexual behavior disorder (CSBD) (Fuss, Lemay, et al., 2019; Reed et al., 2022; Van Rooij et al., 2018). It has also led to ongoing debates about the diagnostic validity of single-symptom impulse control disorders such as intermittent explosive disorder, kleptomania, and pyromania (Sadler, 2015). Despite these conceptual criticisms, it has become increasingly clear in recent years that impulse control disorders and behavioral addictions are relevant for public health either because they are prevalent conditions and represent a significant burden for those affected (e.g., CSBD, gambling disorder, gaming disorder, intermittent explosive disorder), or because they have important forensic implications (e.g., pyromania, kleptomania, intermittent explosive disorder) (Grant et al., 2014; McLaughlin et al., 2012; Morasco et al., 2006; Stevens, Dorstyn, Delfabbro, & King, 2021). The inclusion of these new diagnoses in the ICD-11 has the potential to harmonize research and treatment of disorders that were not previously recognized and may have a predominantly positive impact if they can address a significant public health issue (Grubbs et al., 2020; Király & Demetrovics, 2017; Stein et al., 2018).

Impulse control disorders and behavioral addictions are conditions that involve repeated failures to control a rewarding behavior, despite long-term harm either to the individual or to others (Grant et al., 2014). The behavior patterns are associated with marked distress, or significant impairment in personal, family, social, educational, occupational, or other important areas of functioning. Impulse control disorders and behavioral addictions overlap in that impulses or urges to engage in repetitive behaviors are core features of both categories. However, distinctions between impulse control disorder and behavioral addictions have been debated (Fuss, Briken, Stein, & Lochner, 2019; Grant et al., 2014; Potenza, Gola, Voon, Kor, & Kraus, 2017; Prause, Janssen, Georgiadis, Finn, & Pfaus, 2017). For example, the conceptualization of CSBD as an impulse control disorder follows a long history of scholarly debate about the nature and conception of "out-of-control sexual behavior" syndromes such as sex addiction, hypersexuality, excessive sexual behavior, and sexual compulsivity and impulsivity (Grubbs et al., 2020). Evidence to characterize CSBD as a behavioral addiction in the ICD-11 was considered insufficient and it was thus classified as an impulse control disorder (Kraus et al., 2018). In contrast, gaming disorder was classified as a disorder due to addictive behavior in the ICD-11, but classical features of substance use disorders such as tolerance or withdrawal have not been retained in its diagnostic requirements, due to limited evidence of their clinical validity and usefulness (Billieux, Stein, Castro-Calvo, Higuchi, & King, 2021; Castro-Calvo et al., 2021; Reed et al., 2022).

One concern regarding impulse control disorders and behavioral addictions in the ICD-11 is that they could occur as symptoms of other disorders such as obsessive-compulsive disorder or personality disorder, or as a maladaptive coping to face mood and anxiety disorders. Some experts continue to question whether the treatment of impulse control and addictive disorders as independent diagnostic entities may obscure underlying psychopathology (Bründl & Fuss, 2021). High rates of co-occurrence of impulse control disorders, behavioral addictions, and other mental disorders may be interpreted as providing evidence for this view (Barnett, 2005; Coccaro, Shima, & Lee, 2018; Fuss, Briken, et al., 2019; Karlsson & Håkansson, 2018) or for using a transdiagnostic approach (for an overview see Fusar-Poli et al., 2019).

Another concern is that the conceptualization of impulse control disorders or behavioral addictions could contribute to pathologizing and stigmatizing normal behavior (Aarseth et al., 2017; Bean, Nielsen, van Rooij, & Ferguson, 2017; Billieux, Flayelle, Rumpf, & Stein, 2019; Klein, Briken, Schröder, & Fuss, 2019; Van Rooij et al., 2018; Wakefield, 2011). This is exemplified by an individual who self-labels as a "sex addict" and shows no pathological failure to control sexual impulses. Such self-labeling could be based on moral judgments about sexual behavior, such as those coming from religious beliefs and may be particularly strong when there is an incongruence between an individual's moral values and sexual behaviors (Grubbs, Perry, Wilt, & Reid, 2018). Along the same lines, the emphasis on functional impairment is key for differentiating between individuals with gaming disorder from individuals engaged in intense or persistent patterns of gaming (several hours a day) without experiencing associated negative consequences (Billieux et al., 2017, 2019). In response to these concerns, the WHO developed the ICD-11 CSBD guidelines with a particular focus on the boundary between normality and CSBD as well as differentiation from other mental disorders (Kraus et al., 2018). To address these potential risks of misclassification (i.e., false positives), mental health professionals (MHPs) must be able to differentiate between high involvement and pathological involvement and to distinguish whether a disorder is merely a symptom of another disorder or a disorder in its own right. The present study addressed MHPs' skills at doing this using an established vignette-based field study methodology (Evans et al., 2015; Keeley, Reed, Roberts, Evans, Medina-Mora, et al., 2016).

The study was part of a program of field studies (Keeley, Reed, Roberts, Evans, Medina-Mora, et al., 2016; Reed et al., 2019) conducted by the WHO to evaluate how MHPs assessed different clinical cases using the *Clinical Descriptions and Diagnostic Requirements (CDDR) for ICD-11 Mental, Behavioral and Neurodevelopmental Disorders* as compared to the previous diagnostic guidelines for ICD-10 (World Health Organization, 1992). In previous field trials, the ICD-11 generally outperformed the ICD-10 regarding accuracy and clinical utility for other diagnostic groupings (e.g., Gaebel et al., 2020; Keeley, Reed, Roberts, Evans, Robles, et al., 2016; Keeley et al., 2021; Kogan et al., 2020; Rebello et al., 2019; Reed et al., 2019), and field trial results were used to revise ICD-11 diagnostic manual when indicated.

Using the same case vignette methodology, we compared the accuracy of MHPs using the ICD-11 CDDR to those using ICD-10 diagnostic guidelines to diagnose presentations of impulse control disorders and disorders due to addictive behaviors. Furthermore, we compared their accuracy in differentiating these disorders from other disorders with shared symptomatology and from non-pathological presentations (see Table 1 for our specific research questions). Categories that were the focus of study included newly introduced diagnoses (i.e., CSBD, gaming disorder, intermittent explosive disorder) and those that underwent a revision (i.e., gambling disorder, kleptomania, pyromania). In addition, ratings of ease of use, goodness of fit, confidence in making the diagnosis, and clarity of the diagnostic material by MHPs using the ICD-11 CDDR were compared with those of MHPs using the ICD-10 diagnostic guidelines.

METHODS

Procedures

The field study was implemented over the internet using the Qualtrics (Provo, USA) survey platform in three languages (English, Spanish, and Japanese). Translations of the guidelines and all study materials from the original English version were generated using a standardized forward- and back-translation process described elsewhere (Keeley, Reed, Roberts, Evans, Medina-Mora, et al., 2016). Participants were members of the WHO's Global Clinical Practice Network (GCPN) (Reed et al., 2015). Upon entry to the study, participants were randomly assigned, using block randomization to minimize differences in sample size per condition (Fig. 1), to review either the ICD-11 or ICD-10 diagnostic descriptions (Table 2). Participants were then randomly assigned to one of eleven conditions comprised of two paired case vignettes presented in counter-balanced order and designed to address a research question reflecting the impact of revisions made for ICD-11 (see Table 1). The demographic characteristics of participants assigned to the ICD-11 guidelines did not differ from those of participants assigned to ICD-10 guidelines (Appendix Table A1).

Clinical vignettes were developed by an international group of experts (authors JF, JWK, DJS, PB and GMR) based on amalgams of real patient presentations depicting the specified diagnoses (Table 1). Translations of clinical vignettes were verified for cultural appropriateness by translation coordinators (authors CM and RR). Each clinical vignette was then rated by independent content experts (authors CA, CL, JB, JEG, MNP, SK) to ensure accuracy and expert rater agreement on the diagnosis for each case. Specifically, they rated each vignette and i) marked where in the text they saw the diagnostic guidelines being met and whether they agreed that a given clinical diagnosis was met according to the ICD-11 guidelines, and ii) gave an assessment of the severity of the symptoms presented on a 5-point scale from 0 'no symptoms' to 4 'extremely severe symptoms'. All experts agreed on the given diagnosis. The mean severity rating across raters for the "no disorder" vignettes ranged between 0 and 0.66 and for the vignettes depicting a person with a mental disorder between 2 and 3.66. Vignettes were revised based on this feedback. Details of the vignette validation process have been described elsewhere (Evans et al., 2015).

Before vignette presentation, participants were asked to review the relevant diagnostic guidance from the classification to which they had been assigned (ICD-11 or ICD-10). The material reviewed consisted of the diagnostic guidance in the respective system for all impulse control disorders and

Table 1. Comparison conditions and case vignettes with diagnoses according to the ICD-10 or ICD-11 diagnostic guidelines

Comparison condition	Research question	Vignette	Correct ICD-11 diagnosis	Correct ICD-10 diagnosis	Main vignette results (accuracy, %)
1 – Compulsive sexual behavior disorder	*Compared to ICD-10, can clinicians more accurately differentiate CSBD and normal sexual behavior with high levels of sexual interest and behavior based on the ICD-11 guidance?*	1. Patient self-labeling as a "sex addict" who is distressed about the high sex drive, with high levels of sexual interest and behavior but no pattern of failure to control sexual behavior.	No diagnosis	No diagnosis	ICD-11: 50%, $n = 52$; ICD-10: 39%, $n = 46$, $\chi^2(1) = 1.17$, $p = 0.28$, w = 0.11
		2. Patient with prototypic CSBD experiencing failed control over sexual impulses; repetitive sexual activities have become a central focus of the patient's life to the point of neglecting health and personal care.	CSBD	Excessive sexual drive	ICD-11: 87%, $n = 52$; ICD-10: 59%, $n = 46$, $\chi^2(1) = 9.71$, $\mathbf{p = 0.002}$, w = 0.31
2 - Compulsive sexual behavior disorder	*Compared to ICD-10, can clinicians more accurately differentiate compulsive sexual behavior associated with substance abuse from CSBD using the ICD-11 guidance*?	3. Patient who fails to control sexual impulses that arise in response to crystal methamphetamine use with symptoms of substance dependence. As a result, the patient has experienced some negatives consequence such as sexually transmitted infections.	Stimulant dependence	Other stimulant dependence	(ICD-11: 90%, $n = 48$; ICD-10: 47%, $n = 47$, $\chi2(1) = 20.11$, $\mathbf{p < 0.001}$, w = 0.46
		4. Patient with prototypical symptoms of CSBD who also sometimes uses drugs as a part of the sexual behavior, however, the diagnostic requirements for substance dependence are not met.	CSBD	Excessive sexual drive	ICD-11: 79%, $n = 48$; ICD-10: 66%, $n = 47$, $\chi2(1) = 2.08$, $p = 0.15$, w = 0.15
3 - Compulsive sexual behavior disorder	*Compared to ICD-10, can clinicians more accurately differentiate impulsive sexual behavior in personality disorder from CSBD using the ICD-11 guidance*?	Same as 2	CSBD	Excessive sexual drive	ICD-11: 95%, $n = 56$; ICD-10: 41%, $n = 46$, $\chi2(1) = 34.61$, $\mathbf{p < 0.001}$, w = 0.58
		5. Patient with prototypical symptoms of personality disorder with repeated episodes of impulsive and risky sexual behavior.	Personality disorder	Emotionally unstable personality disorder, impulsive or borderline type	ICD-11: 36%, $n = 56$; ICD-10: 52%, $n = 46$, $\chi2(1) = 2.79$, $p = 0.095$, w = 0.17
4 - Compulsive sexual behavior disorder	*Compared to ICD-10, can clinicians more accurately differentiate between CSBD and high levels of sexual interest and behavior during a manic episode using the ICD-11 guidance?*	Same as 2	CSBD	Excessive sexual drive	ICD-11: 98%, $n = 47$; ICD-10: 59%, $n = 51$, $\chi2(1) = 21.42$, $\mathbf{p < 0.001}$, w = 0.47
		6. Patient with a history of two mood episodes, currently experiencing a manic episode with increased levels of sexual interest and behavior with negative consequences.	Bipolar type I disorder, current episode manic, without psychotic symptoms	Bipolar affective disorder, current episode manic	ICD-11: 81%, $n = 47$; ICD-10: 80%, $n = 51$, $\chi2(1) = 0.00$, $p = 0.95$, w = 0.01

(continued)

Table 1. Continued

Comparison condition	Research question	Vignette	Correct ICD-11 diagnosis	Correct ICD-10 diagnosis	Main vignette results (accuracy, %)
5 – Intermittent explosive disorder	*Compared to ICD-10, can clinicians more accurately differentiate intermittent explosive disorder from aggressive behavior not indicating a mental disorder using the ICD-11 guidance?*	7. Patient with a history of aggressive behavior that is grossly out of proportion to the provocation resulting in significant impairment in important areas of functioning.	Intermittent explosive disorder	Other habit and impulse disorder	ICD-11: 94%, $n = 52$; ICD-10: 18%, $n = 51$, $\chi2(1) = 61.38$, $\mathbf{p > 0.001}$, w = 0.77
		8. Patient with a history of aggressive behavior that is associated with negative consequences; however, the aggressive behavior is not grossly out of proportion to the provocation.	No diagnosis	No diagnosis	ICD-11: 62%, $n = 52$; ICD-10: 63%, $n = 51$, $\chi2(1) = 0.02$, $p = 0.90$, w = 0.01
6 - Intermittent explosive disorder	*Compared to ICD-10, can clinicians more accurately differentiate between aggression in intermittent explosive disorder and mania using the ICD-11 guidance?*	Same as 7	Intermittent explosive disorder	Other habit and impulse disorder	ICD-11: 95%, $n = 42$; ICD-10: 25%, $n = 61$, $\chi2(1) = 49.89$, $\mathbf{p > 0.001}$, w = 0.70
		9. Patient with history of depressive episodes who exhibits a first manic episode. The patient is easily irritable and aggressive to other persons for 2 weeks and also suffers from increased energy, resulting in overactivity, pressured speech, and a decreased need for sleep.	Bipolar type I disorder, current manic episode	Bipolar affective disorder, current manic episode	ICD-11: 81%, $n = 42$; ICD-10: 75%, $n = 61$, $\chi2(1) = 0.44$, $p = 0.51$, w = 0.07
7 - Kleptomania	*Compared to ICD-10, can clinicians more accurately differentiate repeated stealing in kleptomania from stealing in personality disorder using the ICD-11 guidance?*	10. Patient with prominent dissocial features characterized by disregard for social obligations and conventions and the feelings of others. There have been repeated episodes of stealing objects for monetary gain.	Personality disorder	Dissocial personality disorder	ICD-11: 58%, $n = 40$; ICD-10: 82%, $n = 61$, $\chi2(1) = 7.22$, $\mathbf{p = 0.007}$, w = 0.27
		11. Patient with history of repeatedly failing to resist impulses to steal objects that are not acquired for personal use or monetary gain. Immediately before stealing, the person experiences strong and irresistible impulses, along with increased affective arousal while feelings of relief occur in response to stealing.	Kleptomania	Pathological stealing	ICD-11: 95%, $n = 40$; ICD-10: 97%, $n = 61$, $\chi2(1) = 0.19$, $p = 0.66$, w = 0.04
8 - Pyromania	*Compared to ICD-10, can clinicians more accurately differentiate between fire-setting in pyromania and fire-setting in persons with personality disorders using the ICD-11 guidance?*	12. Patient deliberately engaging in repeated acts of setting fire without an apparent motive who is persistently preoccupied with subjects related to fire and burning. The patient experiences strong urges to set fires that are experienced as irresistible or uncontrollable.	Pyromania	Pathological fire-setting	ICD-11: 98%, $n = 51$; ICD-10: 96%, $n = 45$, $\chi^2(1) = 0.49$, $p = 0.49$, w = 0.07

(continued)

Table 1. Continued

Comparison condition	Research question	Vignette	Correct ICD-11 diagnosis	Correct ICD-10 diagnosis	Main vignette results (accuracy, %)
		13. Patient with symptoms of a dissocial personality disorder with repeated violations of social norms and disregard for the feelings of others. The patient exhibits repeated episodes of fire setting against his former employer in order to blackmail them.	Personality disorder	Dissocial personality disorder	ICD-11: 63%, $n = 51$; ICD-10: 62%, $n = 45$, $\chi^2(1) = 0.00$, $p = 0.96$, w = 0.01
9 – Gambling disorder	*Compared to ICD-10, can clinicians more accurately differentiate between normal and pathological gambling using the ICD-11 guidance?*	14. Patient showing frequent and repeated episodes of gambling despite the occurrence of financial loss. However, the person does not show significant impairments in important areas of functioning.	No diagnosis	No diagnosis	ICD-11: 73%, $n = 48$; ICD-10: 67%, $n = 49$, $\chi^2(1) = 0.36$, $p = 0.55$, w = 0.06
		15. Patient with gambling behavior that dominates the person's life so that other important activities are neglected, and the person has lost control over gambling behavior.	Gambling disorder	Pathological gambling	ICD-11: 96%, $n = 48$; ICD-10: 94%, $n = 49$, $\chi^2(1) = 0.19$, $p = 0.66$, w = 0.04
10 – Gambling disorder	*Compared to ICD-10, can clinicians more accurately differentiate gambling disorder from gambling in response to medication using the ICD-11 guidance*?	Same as 15	Gambling disorder	Pathological gambling	ICD-11: 96%, $n = 49$; ICD-10: 90%, $n = 51$, $\chi2(1) = 1.26$, $p = 0.26$, w = 0.11
		16. Patient with Parkinson's disease who starts gambling, but only after onset of medication with dopamine agonists. The gambling behavior has had serious negative consequences for the person and the person is unable to stop or control gambling while on medication.	Substance-Induced Impulse Control Disorder	Unspecified behavioral syndromes associated with physiological disturbances and physical factors	ICD-11: 47%, $n = 49$; ICD-10: 18%, $n = 51$, $\chi2(1) = 9.85$, $\boldsymbol{p = 0.002}$, w = 0.31
11 – Gaming disorder	*Compared to ICD-10, can clinicians more accurately correctly identify pathological gaming using the ICD-11 guidance?*	17. Patient showing persistent and recurrent video-gaming behavior, which significantly impairs functioning for more than 12 months. The behavior is characterized by impaired behavioral control over gaming	Gaming disorder	Other habit and impulse disorder	ICD-11: 94%, $n = 48$; ICD-10: 55%, $n = 49$, $\chi2(1) = 18.93$, $\boldsymbol{p < 0.001}$, w = 0.62
		18. Patient with a history of high involvement in non-pathological gaming. The person shows signs of behavioral control over gaming and does not exhibit significant impairment in functioning	No diagnosis	No diagnosis	ICD-11: 79%, $n = 48$; ICD-10: 59%, $n = 49$, $\chi2(1) = 4.53$, $\boldsymbol{p = 0.033}$, w = 0.22

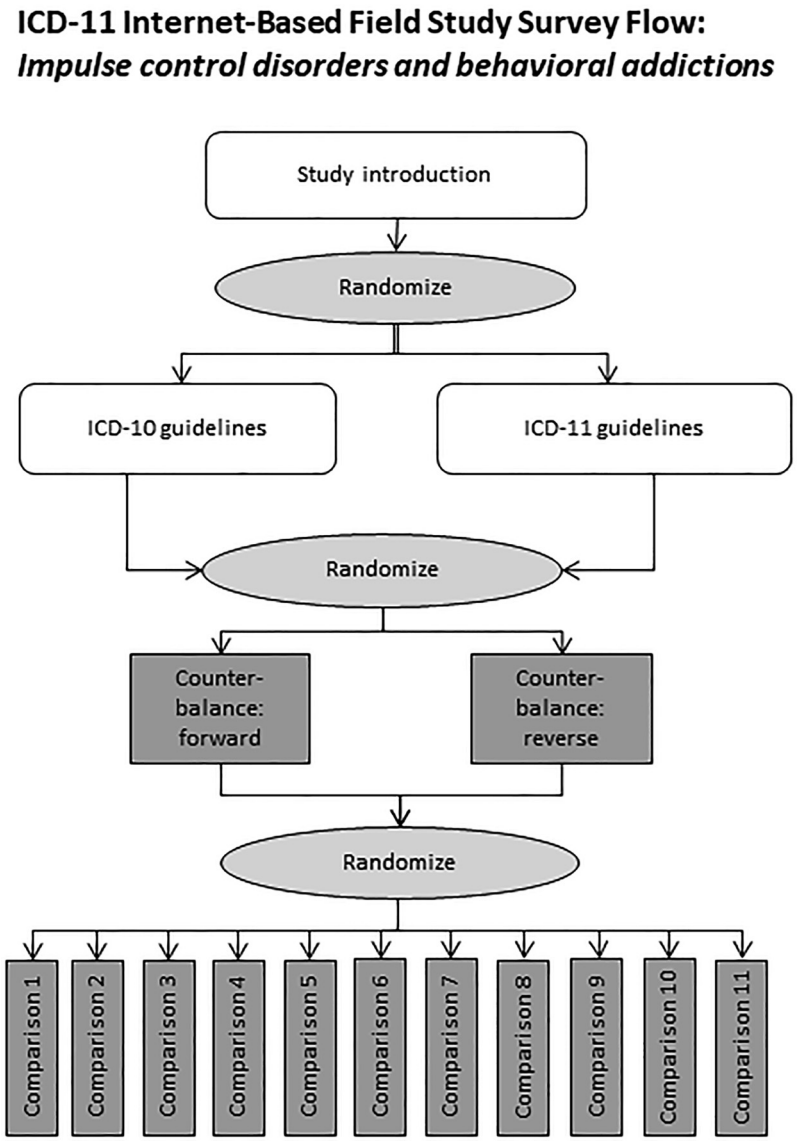

Fig. 1. Randomization of the participants to eleven comparisons

disorders due to addictive behaviours as well as a range of diagnoses with overlapping symptomatology (see Table 2). Following the presentation of each vignette, participants were prompted to select a diagnosis from a list of diagnostic categories from the classification system to which they were assigned. Participants could also indicate that no diagnosis was warranted or enter a diagnosis of their choosing from a different area. After selecting a diagnosis for a given vignette, participants were presented with each of the required features for that diagnosis sequentially and asked to indicate whether the feature was present or absent or whether they were unsure. Following this review of the required features, participants were provided with the opportunity to change their response option.

After a final diagnosis was assigned, participants were asked a series of questions to assess the clinical utility of the guidelines. The following aspects of clinical utility were assessed using four-point Likert scales from 'not at all' to 'extremely': ease-of-use, goodness of fit, confidence in their diagnosis, and clarity of the guidance provided. Upon completion of ratings for the first vignette, participants were shown the second clinical vignette for the specific comparison condition (Table 1), following the same procedure.

The study protocol was exempted by the Research Ethics Review Committee of the WHO and the Human Subjects Committee of the University of Kansas, where the servers hosting the survey were located. Each participant was asked to provide their informed consent before participating and were told they could terminate their participation at any time.

Participants

Participants were recruited from the WHO's GCPN, an international network of mental health and primary care professionals who registered in the GCPN to participate

Table 2. Diagnostic response options in the ICD-11 and ICD-10

ICD-11 Diagnostic Options	ICD-10 Diagnostic Options
Pyromania	Pathological fire-setting
Kleptomania	Pathological stealing
Compulsive Sexual Behavior Disorder	Excessive sexual drive
	Other sexual dysfunction not caused by organic disorder or disease
Intermittent Explosive Disorder	
Other Impulse Control Disorder	Other habit and impulse control disorders
	Habit and impulse disorder unspecified
Gambling Disorder	Pathological gambling
	Unspecified behavioral syndromes associated with physiological disturbances and physical factors
Gaming Disorder	
Substance-Induced Impulse Control Disorder	Mental and behavioral disorders due to use of other stimulants, including caffeine
Manic episode	Manic episode
Personality Disorder (general)	Dissocial personality disorder
	Emotionally unstable personality disorder: impulsive type
	Emotionally unstable personality disorder: borderline type
Substance Dependence	Harmful use
	Dependence syndrome

in field studies for the Mental, Behavioral and Neurodevelopmental Disorders chapter of the ICD-11 (Reed et al., 2015). At the time of sample selection there were 15,056 GCPN members from 156 countries. Eligibility criteria for the present study were: a) currently providing or supervising the provision of clinical mental health services, and b) advanced proficiency or fluency in one of the three study languages (English, Spanish, and Japanese). Eligible GCPN members were sent a study invitation e-mail with an embedded individualized link. Reminder e-mails were sent at ten days and twenty days following the initial invitation. Data collection occurred over a 2-month period for each language version of the study between November 2018 and April 2021.

Data analysis

For each of the eleven comparisons tested (Table 1), we analyzed diagnostic accuracy with pairwise comparisons between classification conditions for the two vignettes using the χ^2 statistic with Cohen's w effect sizes. When diagnoses were compared across diagnostic systems and vignettes (i.e., a three-way interaction), we used the G^2statistic, which is a log-linear transformation of the χ^2 distribution (Rao & Scott, 1984). A Generalized Estimating Equation with binomial distribution was used to predict diagnostic accuracy by classification system and sociodemographic variables.

Ethics

The series of Global Clinical Practice Network ICD-11 field studies of which the present study is a part was exempted from review by the World Health Organization Research Ethics Review Committee, Protocol ID RPC569. At entry to the study after clicking on the invitation link, participants were given a clear description of the study and indicated their consent to participate before proceeding.

RESULTS

9,010 eligible members of the GCPN were invited to participate in the study. Of the 1,408 individuals who agreed to participate (response rate = 15.6%), 1,103 (78.3%) provided complete data for inclusion in the analyses. Thirteen participants were excluded from analysis because they indicated that they were no longer seeing patients or supervising the provision of clinical services at the time of the study or because they indicated they lacked proficiency with the language in which they participated in the study. The final sample included in the analyses was 1,090 participants. Descriptive statistics for the demographic variables (WHO region, language, gender, profession, age, and years of experience) for the final sample are presented in Table 3. Completers differed significantly from those who were invited to participate but did not respond in terms of gender ($\chi^2(2) = 8.34$, $p = 0.015$) and age ($t(1,384) = -2.23$, $p = 0.026$) but not on any other demographic variable. Completers, as compared to those invited but not responding, were more likely to be male (8.8% difference) and older (on average 1.70 years).

Diagnostic accuracy

Compulsive sexual behavior disorder (CSBD).

1. *CSBD versus normal sexual behavior with high levels of sexual interest and behavior*. The first comparison was designed to test the threshold between nonpathological sexual behavior and interest and CSBD. Clinicians were presented with a vignette describing a case of CSBD and one describing a person presenting with personal distress about high levels of sexual drive and behavior. "Excessive sexual drive" in ICD-10 can be applied to either vignette, although it is worth noting that this

Table 3. Participant demographic information

	English *f* (%)	Spanish *f* (%)	Japanese *f* (%)	TOTAL *F (%)*
Region				
AFRO	50 (6.6)			50 (4.6)
AMRO-North	117 (15.4)	1 (0.5)		118 (10.8)
AMRO-South	24 (3.2)	132 (65.3)		156 (14.3)
EMRO	42 (5.5)			42 (3.9)
EURO	377 (49.7)	69 (34.2)		446 (40.9)
SEARO	102 (13.5)			102 (9.4)
WPRO-Asia	12 (1.6)		130 (100.0)	142 (13.0)
WPRO-Oceania	34 (4.5)			34 (3.1)
Gender				
Male	472 (62.3)	100 (49.5)	105 (80.8)	677 (62.1)
Female	283 (37.3)	101 (50.0)	25 (19.2)	409 (37.5)
Other	3 (0.4)	1 (0.5)		4 (0.4)
Profession				
Medicine	395 (52.1)	57 (28.2)	108 (83.1)	560 (51.4)
Psychology	246 (32.5)	126 (62.4)	18 (13.8)	390 (35.8)
Counseling	37 (4.9)	3 (1.5)	1 (0.8)	41 (3.8)
Other	80 (10.5)	16 (7.9)	3 (2.3)	99 (9.0)
	Mean (SD)	Mean (SD)	Mean (SD)	Mean (SD)
Age	51.9 (11.87)	50.6 (10.68)	50.6 (10.38)	51.5 (11.49)
Years of Experience	18.8 (10.87)	21.3 (9.82)	18.9 (10.34)	19.3 (10.65)
Total *n*	758	202	130	1,090

Note: AFRO = African region; AMRO-North = North American region (U.S. and Canada); AMRO-South = South American region (Latin America); EMRO = Middle Eastern region; EURO = European region; SEARO = South Eastern Asian region; WPRO-Asia = Asian part of Western Pacific region; WPRO-Oceania = Australia and New Zealand. WHO Global Regions AMRO and WPRO were divided into two parts to distinguish high-income, predominantly English-speaking parts of those regions from other countries.

diagnosis does not specify whether there needs to be a pathological component to the sexual behavior or the extent to which the person is engaging in it, only requiring that there be a subjective complaint. The ICD-10 diagnosis of excessive sexual drive may therefore be less useful than ICD-11 CSBD, which does characterize a pathological component of the person's actual sexual behavior. This comparison thus scrutinized whether the inclusion of the CSBD diagnosis is beneficial for the identification of pathological and non-pathological sexual behavior when accompanied by high levels of sexual drive. Clinicians more consistently identified those individuals with CSBD in ICD-11 compared to ICD-10 (ICD-11: 87%, ICD-10: 59%, see Table 1 for statistical results). Although a larger percentage of participants indicated that no diagnosis was warranted in response to the vignette describing non-pathological sexual behavior with high levels of sexual interest when using the ICD-11 compared to the ICD-10 (ICD-11: 50%, ICD-10: 39%), this difference was not statistically significant. Under both classification systems, a high percentage of MHPs assigned a diagnosis to a person even though no mental disorder was present according to ICD-11 guidelines. Overall, the ICD-11 performed better than the ICD-10 in distinguishing between pathological and non-pathological cases ($G^2(4) = 47.88$, $p < 0.001$, w = 0.70).

2. *CSBD versus repetitive sexual behavior associated with substance use*. The second comparison addressed the ability of clinicians to identify if prototypical symptoms of compulsive sexual behavior appear only in response to substance use. Under ICD-11 diagnostic guidance, the complex clinical judgment of the common co-occurrence of CSBD and substance use is discussed, while ICD-10 does not address this phenomenon. Under ICD-11 requirements, clinicians more consistently identified when substance dependence was the primary diagnosis in contrast to CSBD when a sexual behavior only appeared in response to substance abuse (ICD-11: 90%, ICD-10: 47%). However, a more similar proportion of the participants using the ICD-11 correctly assigned the diagnosis of CSBD as assigned the diagnosis of excessive sexual drive using the ICD-10 to a vignette describing CSBD with comorbid substance abuse (ICD-11: 79%, ICD-10: 66%). Nonetheless, the overall pattern of diagnosing favored the ICD-11 across the two vignettes ($G^2(4) = 42.76$, $p < 0.001$, w = 0.67).
3. *CSBD versus impulsive sexual behavior in emotionally unstable personality disorder*. This comparison focused on clinicians' ability to differentiate between impulsive and risky sexual behaviors in CSBD and those in emotionally unstable personality disorder. While clinicians were again more accurate to diagnose CSBD under ICD-11 conditions (ICD-11: 95%, ICD-10: 41%), the accuracy in diagnosing a personality disorder was low regardless of classification (ICD-11: 36%, ICD-10: 52%). Overall, the pattern of diagnosis taking both vignettes

into account was superior when clinicians used the ICD-11 ($G^2(4) = 43.50$, $p < 0.002$, w = 0.65).

4. *CSBD versus mania*. This comparison focused on the differential diagnosis of CSBD from persons with high levels of sexual interest and behavior during a manic episode. Along with lost social inhibitions, increased self-esteem and overconfidence, some persons with bipolar disorder show increased sexual behavior and interest. Such sexual behavior and interests are always accompanied by other typical symptoms in persons with mania. Again, clinicians were more accurately able to diagnose CSBD under ICD-11 conditions (ICD-11: 98%, ICD-10: 59%); the accuracy of diagnosing a manic episode was comparable across classification systems (ICD-11: 81%, ICD-10: 80%). When comparing both vignettes across systems, the ICD-11 outperformed the ICD-10 ($G^2(4) = 215.74$, $p < 0.001$, w = 1.48) which was primarily driven by the improved diagnosis of the compulsive sexual behavior vignette.

Intermittent explosive disorder.

5. *Intermittent explosive disorder versus non-pathological aggression*. This comparison was concerned with the ability of clinicians to recognize the difference between intermittent explosive disorder and aggressive behavior not associated with a mental disorder. Intermittent explosive disorder is not a distinct disorder in the ICD-10 but has been added to ICD-11 as a standalone diagnosis. Therefore, for ICD-10, "other habit and impulse disorder" was accepted as the correct diagnosis. Both vignettes described a person exhibiting repeated episodes of verbal or physical aggression. In intermittent explosive disorder, the aggressive behavior was described as grossly out of proportion to the provocation resulting in significant impairment in important areas of functioning. As expected, clinicians more consistently identified those individuals with intermittent explosive disorder in the ICD-11 compared to ICD-10 (ICD-11: 94%, ICD-10: 18%). However, accuracy was lower for identifying when aggressive behavior did not signify the presence of a mental disorder, with no difference between classifications (ICD-11: 62%, ICD-10: 63%). Again, the ICD-11 showed higher rates of diagnostic accuracy when taking both vignettes into account ($G^2(4) = 70.70$, $p < 0.001$, w = 0.83) which was primarily driven by correct diagnosis of the intermittent explosive disorder case.
6. *Intermittent explosive disorder versus mania*. This comparison focused on clinicians' ability to differentiate between aggression in intermittent explosive disorder as compared to mania. Aggression in persons with mania is often a result of lost social inhibitions, increased self-esteem, and overconfidence. Notably, even if aggression is a prominent symptom in mania, it is accompanied by other symptoms such as extreme mood states, while aggressive outbursts are typically only brief episodes in intermittent explosive disorder. Repeated failures to resist aggressive impulses despite longer-term harm is the defining feature of intermittent explosive disorder. Again, clinicians were more accurately able to diagnose intermittent explosive disorder under ICD-11 conditions (ICD-11: 95%, ICD-10: 25%), while the accuracy of diagnosing a manic episode was comparable across classification systems (ICD-11: 81%, ICD-10: 75%). The combination across vignettes favored the ICD-11 overall ($G^2(4) = 68.88$, $p < 0.001$, w = 0.82).

Comparing kleptomania and pyromania with personality disorder.

7. *Kleptomania versus stealing as a symptom of personality disorder*. Some forms of repeated stealing that present in persons with personality disorder may be misdiagnosed as kleptomania (Fridell, Hesse, Jæger, & Kühlhorn, 2008; Grant, 2004; Leonova & Shostakovich, 2007). In this comparison, a vignette describing a person with a personality disorder with prominent dissocial features was compared to a vignette with prototypical symptoms of kleptomania. Differences in accuracy were not detected between classifications in identifying kleptomania with the accuracy being very high in both groups (ICD-11: 95%, ICD-10: 97%). However, clinicians were more accurately able to diagnose a personality disorder under ICD-10 compared to ICD-11 conditions (ICD-11: 58%; ICD-10: 82%). The difference between systems when taking both vignettes into account was non-significant ($G^2(4) = 9.46$, *ns*, w = 0.31).
8. *Pyromania versus fire-setting as a symptom of personality disorder*. This comparison was again concerned with the ability of clinicians to recognize the difference between an impulse control disorder and personality disorder, where fire-setting occurs in both cases. The key difference is that persons with pyromania experience an irresistible or uncontrollable urge to set fires, while persons with personality disorder present with other reasons to set fires (e.g., as an act of revenge or for financial gain). Differences in accuracy were not detected between classifications in identifying pyromania (ICD-11: 98%, ICD-10: 96%) or fire-setting in the context of a personality disorder (ICD-11: 63%, ICD-10: 62%) or overall ($G^2(4) = 0.48$, *ns*, w = 0.07).

Overall accuracy of behavioral addiction diagnoses.

9. *Gambling disorder versus non-pathological gambling*. In this comparison, we evaluated whether the inclusion of gambling disorder in disorders due to addictive behaviors in the ICD-11 diagnostic guidelines would improve clinicians' ability to differentiate between pathological and non-pathological gambling compared to ICD-10. Specifically, this comparison addressed whether clinicians could distinguish cases with gambling behavior involving functional impairment and impaired behavioral control from cases without those features. We found no difference between classification systems concerning the accuracy of gambling disorder (ICD-11: 96%, ICD-10:

94%), non-pathological gambling (ICD-11: 73%, ICD-10: 67%), or their combination ($G^2(4) = 2.78$, *ns*, w = 0.17).

10. *Gambling Disorder vs disordered gambling as a sequela of medication*. This comparison tested the ability of clinicians to differentiate between gambling disorder and disordered gambling as a sequela of medication. While under both classification systems, clinicians showed a high accuracy for diagnosing gambling disorder (ICD-11: 96%, ICD-10: 90%), they were less accurately able to assess disordered gambling because of medication under ICD-10 guidelines (ICD-11: 47%, ICD-10: 18%). ICD-11 performed better when considering both vignettes in combination ($G^2(4) = 119.22$, $p < 0.001$, w = 1.09).
11. *Gaming disorder versus normal gaming*. In this comparison, we evaluated how including gaming disorder as a distinct diagnostic entity in the ICD-11 may influence clinicians' assessment. Excessive and pathological video-gaming cannot be diagnosed as a distinct disorder in ICD-10. Therefore, for ICD-10, "other habit and impulse control disorder" was accepted as the correct diagnosis as gaming disorder has only been added in ICD-11 as a standalone diagnosis. One vignette described a person that shows persistent and recurrent video-gaming behavior, which significantly impairs functioning and is perceived as uncontrollable. Another vignette described high involvement in non-pathological gaming. As expected, clinicians were more accurately able to diagnose pathological gaming under ICD-11 conditions (ICD-11: 94%, ICD-10: 55%), and were also more accurate when assessing non-pathological video gaming (ICD-11: 79%, ICD-10: 59%). In combination, the ICD-11 outperformed the ICD-10 ($G^2(4) = 26.08$, $p < 0.001$, w = 0.52).

Next, we used a Generalized Estimating Equation to predict diagnostic accuracy by classification system (ICD-11 vs. ICD-10) and sociodemographic variables. We found that across all comparisons, participants assigned to the ICD-11 guidelines showed higher diagnostic accuracy (odds ratio: 2.54; 95% confidence interval: 1.88 – 2.71; Appendix Table A2) compared to participants using the ICD-10 guidelines. Female mental health professionals made more accurate diagnoses than males (odds ratio: 1.37; 95% confidence interval: 1.12 – 1.68), but the effect was smaller than that of diagnostic system.

Clinical utility variables

Most comparisons of clinical utility variables (i.e., ease of use, goodness of fit, confidence in their diagnosis, and conceptual clarity of the guidelines) revealed no significant differences across classification conditions; however, there were a few notable exceptions. Participants rated the goodness of fit and ease of use for intermittent explosive disorder requirements in the ICD-11 as higher than in the ICD-10 guidelines. Moreover, they rated the clarity of several guidelines as superior in the ICD-11 compared to ICD-10, especially those guidelines that underwent a major revision or were newly conceptualized in the ICD-11 (e.g., gaming disorder, intermittent explosive disorder and CSBD). They also viewed the ICD-11 as clearer with regards to when no diagnosis should be made (Table 4).

DISCUSSION AND CONCLUSIONS

The present global, multilingual field study evaluated the accuracy of MHPs' diagnoses of standardized case vignettes using the ICD-11 diagnostic requirements for impulse control disorders and behavioral addictions. It also assessed clinicians' perceptions of clinical utility relative to the ICD-10 guidelines. Overall, the ICD-11 outperformed the ICD-10 in accuracy of diagnosing impulse control disorders or behavioral addictions in most comparisons, while the ICD-10 was not superior in any case. The superiority of the ICD-11 was particularly clear when new diagnoses were included in the classification system or underwent a substantial revision (e.g., comparing ICD-11 CSBD with ICD-10 excessive sexual drive and ICD-11 intermittent explosive disorder and gaming disorder, respectively, with ICD-10 other habit and impulse control disorders). In contrast, we found no difference in accuracy when diagnosing an impulse control disorder or behavioral addiction for those disorders that underwent only minor revisions (i.e., gambling disorder, pyromania, and kleptomania). Moreover, the ICD-11 outperformed the ICD-10 only in a minority of cases in which MHPs had to evaluate cases that portrayed behavior displaying high involvement but classified as non-pathological.

Compulsive sexual behavior disorder

In the present study, the proportion of MHPs assigning a correct diagnosis for people showing out-of-control sexual behaviors was generally high when using the ICD-11 diagnostic requirements. However, when confronted with a subthreshold vignette describing a person who self-labeled as "sex addict" but showed no loss of control over sexual behaviors, only 50% employing ICD-11 diagnostic guidance and 39% using ICD-10 correctly recognized that no diagnosis should be assigned. In other words, half of MHPs assigned a diagnosis to a person even though no mental disorder was present following ICD-11 diagnostic requirements. The high rate of false positive diagnoses may be related to differing views of non-normative sexual behavior that influence clinicians' diagnostic decisions in assigning CSBD diagnosis as well as patients' self-labeling. Previous research has indeed shown that irrelevant notions about the biological underpinnings of sexual behavior may influence how MHPs evaluate people that present with symptoms of CSBD (Klein et al., 2019). This could also reflect clinicians' lack of comfort with the sexual issues of patients and so they accept self-diagnosis as a means of avoiding uncomfortable topics.

Determining if these factors operate would be an important focus of future research. Regardless, the findings highlight the need for training programs worldwide to educate MHPs about phenomena such as moral incongruence and

Table 4. Clinical utility variables with statistically significant results by classification

	Not at all *f* (%)	Somewhat *f* (%)	Quite *f* (%)	Extremely *f* (%)	Statistical analysis
Ease of Use					
ICD-11 Intermittent explosive disorder	2 (1.7)	14 (12.1)	60 (51.7)	40 (34.5)	$\chi^2(3) = 43.47$, $p < 0.001$, w = 0.43
ICD-10 Other habit and impulse disorder	13 (11.2)	46 (39.7)	46 (39.7)	11 (9.5)	
Goodness of Fit					
ICD-11 Intermittent explosive disorder	0 (0.0)	12 (10.3)	64 (55.2)	40 (34.5	$\chi^2(3) = 45.80$, $p < 0.001$, w = 0.44
ICD-10 Other habit and impulse disorder	6 (5.2)	47 (40.5)	53 (45.7)	10 (8.6)	
Goodness of Fit					
ICD-11 CSBD	2 (0.9)	28 (12.3)	115 (50.7)	82 (36.1)	$\chi^2(3) = 9.79$, $p = 0.020$, w = 0.16
ICD-10 Excessive sexual drive	2 (1.4)	34 (24.6)	62 (44.9)	40 (29.0)	
Confidence					
ICD-11 Personality Disorder	0 (0.0)	17 (20.5)	42 (50.6)	24 (28.9)	$\chi^2(3) = 13.82$, $p = 0.003$, w = 0.37
ICD-10 Emotionally unstable personality disorder: Borderline type	1 (5.9)	8 (47.1)	8 (47.1)	0 (0.0)	
Confidence					
ICD-11 Gaming disorder	1 (1.9)	10 (19.2)	23 (44.2)	18 (34.6)	$\chi^2(3) = 20.39$, $p < 0.001$, w = 0.44
ICD-10 Habit and impulse disorder, unspecified	4 (7.7)	24 (46.2)	22 (42.3)	2 (3.8)	
Confidence					
ICD-11 Intermittent explosive disorder	0 (0.0)	16 (13.8)	59 (50.9)	41 (35.3)	$\chi^2(3) = 45.77$, $p < 0.001$, w = 0.44
ICD-10 Other habit and impulse disorder	10 (8.6)	42 (36.2)	57 (49.1)	7 (6.0)	
Clarity					
ICD-11 Personality Disorder	0 (0.0)	20 (24.1)	43 (51.8)	20 (24.1)	$\chi^2(3) = 6.05$, $p = 0.048$, w = 0.23
ICD-10 Emotionally unstable personality disorder: Borderline type	0 (0.0)	8 (47.1)	9 (52.9)	0 (0.0)	
Clarity					
ICD-11 Gaming disorder	1 (1.9)	5 (9.6)	25 (48.1)	21 (40.4)	$\chi^2(3) = 32.61$, $p < 0.001$, w = 0.56
ICD-10 Habit and impulse disorder, unspecified	10 (19.2)	20 (38.5)	20 (38.5)	2 (3.8)	
Clarity					
ICD-11 Intermittent explosive disorder	1 (0.9)	12 (10.3)	64 (55.2)	39 (33.6)	$\chi^2(3) = 51.90$, $p < 0.001$, w = 0.47
ICD-10 Other habit and impulse disorder	9 (7.8)	51 (44.0)	47 (40.5)	9 (7.8)	
Clarity					
ICD-11 CSBD	1 (0.4)	27 (11.9)	115 (50.7)	84 (37.0)	$\chi^2(3) = 14.57$, $p = 0.002$, w = 0.20
ICD-10 Excessive sexual drive	5 (3.6)	31 (22.5)	66 (47.8)	36 (26.1)	
Clarity					
ICD-11 No diagnosis	1 (0.6)	27 (17.4)	87 (56.1)	40 (25.8)	$\chi^2(3) = 12.16$, $p < 0.071$, w = 0.21
ICD-10 No diagnosis	7 (5.6)	31 (25.0)	68 (54.8)	18 (14.5)	

about the distinction between disorder and non-disorder in the context of sexual behavior. One way to screen for sexual behavior that may meet the threshold for CSBD is to use validated measures based on the ICD-11 requirements, such as the CSBD-19 or CSBD-7 scales (Bőthe et al., 2020, 2023).

Pyromania, kleptomania, and intermittent explosive disorder

The ICD-11 conceptualizes pyromania, kleptomania, and intermittent explosive disorder as distinct disorders and strongly emphasises the boundary with normality and other mental disorders. For example, the ICD-11 diagnostic requirements stress for all three diagnoses that the behavior is not better explained by another mental and behavioral disorder. Moreover, the guidelines for pyromania and kleptomania emphasise that people with personality disorder may present with comparable symptoms but individuals with kleptomania or pyromania show no behavior reminiscent of a personality disorder outside of problematic stealing or fire setting, which is aligned with the historic concept of monomanias. In contrast, the guideline for intermittent explosive disorder does not rule out an additional diagnosis of personality disorder depending on the specific clinical situation and is thus more liberal regarding comorbidities. While ICD-11 guidelines for pyromania and kleptomania underwent only minor revisions from ICD-10, intermittent explosive disorder is newly introduced in the ICD-11 but has been listed in various editions of the DSM including DSM-5 (Coccaro, 2012). It is therefore not surprising that in the present study the accuracy of diagnosing pyromania and kleptomania was high for both ICD-10 and ICD-11. In contrast, MHPs were significantly more accurate diagnosing ICD-11 intermittent explosive disorder compared to the rather non-specific guidelines for other habit and impulse disorder in the ICD-10. When presented with a subthreshold presentation of intermittent explosive disorder that should not receive a diagnosis, however, only about 60% of participants correctly assigned no diagnosis under both systems. This suggests the need for emphasis on the boundaries with normality in MHP training and in future revisions of the diagnostic manual.

Gambling disorder and gaming disorder

In the ICD-11, gambling disorder and gaming disorder are included in the grouping of disorders due to substance use and addictive behaviors but are cross-listed with impulse control disorders because they share common clinical and conceptual features. This is a major novelty, as gambling disorder was conceptualized as an impulse control disorder in the ICD-10 (termed pathological gambling) and gaming disorder was not included. The introduction of gaming disorder was accompanied with some criticism (Fuss, Lemay, et al., 2019) due to concerns that it may pathologize normal gaming behavior (Aarseth et al., 2017; Van Rooij et al., 2018) and experts warn that the distinction between high involvement (without negative consequences and functional impairment) and pathological involvement is crucial to ensure the validity and utility of the gaming disorder diagnosis (Billieux et al., 2019; Reed et al., 2022). This criticism was examined in the present field trial and MHPs showed significantly higher accuracy in detecting gaming disorder as well as non-pathological gaming under ICD-11 versus ICD-10 conditions. In contrast, vignettes addressing gambling disorder that underwent only a minor revision were comparable under ICD-11 and ICD-10 conditions. These findings, and particularly the high degree of MHPs correctly assigning no diagnosis to a case of high but non-pathological involvement in video gaming (79%), show that the risk for overdiagnosis seems to be smaller for gaming disorder compared to other disorders such as CSBD. Such differences may be due to higher stigmatization of people with sexual symptoms compared to video game-related symptoms.

Personality disorder

MHPs were less accurate in detecting a personality disorder using the ICD-11 guidelines in the vignette addressing stealing. A possible reason may be that participants in the ICD-11 condition only received the general diagnostic guidelines for personality disorder (no information on trait domains or borderline pattern, see Tyrer, Reed, & Crawford, 2015). For ICD-10, they received guidelines for three specific personality disorders: dissocial personality disorder, emotionally unstable personality disorder: impulsive type, and emotionally unstable personality disorder: borderline type. Thus, it seems that clinicians had an easier time matching the specific behavior described in the vignette to the more prototypic disorder descriptions in the ICD-10, with which many of them would already have been familiar from daily practice and are more comparable to the criteria for specific personality disorders in the DSM, as compared to the substantially different approach to the diagnosis of personality disorder in the ICD-11.

Limitations

Participants in this study were highly experienced MHPs with an interest in the development of the ICD-11. It is possible that the findings from this study may not generalize to other MHPs with less experience or motivation. Additionally, diagnostic practices may differ when interacting with live patients rather than standardized case vignettes, particularly because it is possible to ask additional questions in live interviews. It is also possible that clinicians may not have read the diagnostic requirements carefully in the current study, as compared to clinicians engaged in clinical work, and simply assigned a diagnosis based on the type of behavior involved.

CONCLUSION

Overall, the present study indicates that the ICD-11 diagnostic requirements for impulse control disorders and behavioral addictions represent an improvement over the

ICD-10 guidelines. These improvements primarily affect those diagnoses that have undergone significant revision or are new to the classification system (i.e., CSBD, intermittent explosive disorder, and gaming disorder). However, additional efforts, such as training programs for MHPs or further refinement of the diagnostic material, are necessary to avoid overdiagnosis of people highly involved in non-pathological repetitive behaviors.

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APPENDIX

Table A1. Participants' clinical and demographic characteristics by Diagnostic Classification System

	ICD-11 (n = 533) f (%)	ICD-10 (n = 557) f (%)	Statistical test
Region			$c^2(7) = 3.226$, $p = 0.863$
EURO	218 (40.9)	228 (40.9)	
AMRO-South	72 (13.5)	84 (15.1)	
WPRO-Asia	72 (13.5)	70 (12.6)	
AMRO-North	55 (10.3)	63 (11.3)	
SEARO	55 (10.3)	47 (8.4)	
AFRO	24 (4.5)	26 (4.7)	
EMRO	18 (3.4)	24 (4.3)	
WPRO-Oceania	19 (3.6)	15 (2.7)	
Gender			$c^2(2) = 1.737$, $p = 0.42$
Male	324 (60.8)	353 (63.4)	
Female	206 (38.6)	203 (36.4)	
Other	3 (0.6)	1 (0.2)	
Profession			$c^2(9) = 12.061$, $p = 0.21$
Medicine	268 (50.3)	292 (52.4)	
Psychiatry	255 (95.1)	275 (94.2)	$c^2(3) = 1.873$, $p = 0.599$
Other	7 (2.6)	8 (2.7)	
Unknown	6 (2.2)	7 (2.4)	
Primary	0 (0)	2 (0.7)	
Psychology	193 (36.2)	197 (35.4)	
Counseling	25 (4.7)	16 (2.9)	
Other	19 (3.6)	16 (2.9)	
Social Work	6 (1.1)	18 (3.2)	
Nursing	11 (2.1)	7 (1.3)	
Occupational Therapy	8 (1.5)	9 (1.6)	
Sex Therapy	1 (0.2)	2 (0.4)	

(continued)

Table A1. Continued

	ICD-11 (n = 533) f (%)	ICD-10 (n = 557) f (%)	Statistical test
Speech Therapy	1 (0.2)	0 (0)	
Certified Peer Support Worker	1 (0.2)	0 (0)	
	M (SD)	***M (SD)***	
Age	52 (11.42)	51 (11.55)	t (1,088) = 1.402, p = 0.161
Experience years	19.9 (10.86)	18.8 (10.43)	t (1,088) = 1.709, p = 0.088

Table A2. Generalized Estimating Equation with binomial distribution predicting diagnostic accuracy by Diagnostic Classification System and sociodemographic variables (n = 2,180).

Parameter	Odds ratio	95% Confidence Interval	
		Lower	Upper
(Intercept)	1.28	0.751	2.196
Diagnostic Classification System			
ICD-10	(reference)	–	–
ICD-11	2.54***	1.875	2.711
Gender			
Other genders[1]	(reference)	–	–
Woman	1.37**	1.122	1.675
Profession			
Psychologist	(reference)	–	–
Physician	1.21	0.987	1.487
Other professions[2]	0.86	0.637	1.154
Age	1.00	0.987	1.015
Experience years	1.00	0.981	1.010

***p < 0.001; **p < 0.01; *p < 0.05.

[1] Includes male and other gender.

[2] Includes counseling, nursing, social work, sex therapy, speech therapy, occupational therapy, certified peer support worker, and other professions.

Note: Model adjusted by subject effect on 1,090 unique subjects.