

Appendix

Appendix A: ICD-11 codes and text used in the analysis

- A) Persistent delusions (e.g., grandiose delusions, delusions of reference, persecutory delusions).

MB26.0 Delusion: A belief that is demonstrably untrue or not shared by others, usually based on incorrect inference about external reality. The belief is firmly held with conviction and is not, or is only briefly, susceptible to modification by experience or evidence that contradicts it. The belief is not ordinarily accepted by other members or the person's culture or subculture (i.e., it is not an article of religious faith)

MB26.00 Bizarre delusion: A delusion that involves a phenomenon that would be regarded as physically impossible within the person's cultural context.

MB26.01 Delusion of being controlled: A delusion that involves an external force or person controlling one's feelings, impulses, thoughts, or behaviour.

MB26.02 Delusion of guilt: A delusion involving exaggerated or inappropriate responsibility, need for punishment or retribution, or disproportionate consequences of one's actions, such as that a minor error in the past will lead to disaster, that the person has committed a sin or horrible crime and should be punished severely, or that the person is responsible for a horrible outcome with which there can be no possible connection.

MB26.03 Delusion of reference: A delusion that events, objects, or other people in the person's immediate environment have a particular and unusual personal significance, usually of a negative or pejorative nature.

MB26.04 Erotomanic delusion: A delusion that another person, usually of higher status, is in love with the individual.

MB26.05 Grandiose delusion: A delusion of inflated worth, power, knowledge, identity, or special relationship to a deity or famous person.

MB26.07 Persecutory delusion: A delusion in which the central theme is that one (or someone to whom one is close) is being attacked, mocked, harassed, cheated, conspired against, or persecuted.

MB26.08 Religious delusion: A delusion involving religious or spiritual themes or subject matter that other members of the person's religious group do not accept as possible.

MB26.09 Somatic delusion: A delusion involving the functioning or appearance of one's body, including of having a serious disease.

MB26.0A Nihilistic delusion: A delusion that the self, part of the self, part of the body, other persons, or the whole world has ceased to exist.

MB26.0B Misidentification delusion: A delusion that people in one's environment, which may include family members and loved ones, are imposters or actors or are otherwise not who they seem to be.

MB26.0C Delusion of impoverishment: A delusional conviction that one is currently destitute or soon will be, or that one does not have the necessary financial resources to live on, in spite of evidence to the contrary.

B) Persistent hallucinations (most commonly auditory, although they may be in any sensory modality).

MB27.2 Hallucinations: Sensory perceptions of any modality occurring in the absence of the appropriate (external) stimulus. The person may or may not have insight into the unreal nature of the perception.

MB27.20 Auditory hallucinations: Hallucinations involving the perception of sound, most frequently of voices but sometimes of clicks or other noises, that are not restricted to the period of awakening or the onset of sleep.

MB27.21 Gustatory hallucinations: Hallucinations of taste in the absence of an actual external stimulus.

MB27.22 Hypnopompic hallucinations: Hallucinations that occur during the period of awakening, most commonly of the visual, tactile or auditory modality.

MB27.23 Hypnagogic hallucinations: Hallucinations that occur at the onset of sleep, most commonly of the visual, tactile or auditory modality.

MB27.24 Olfactory hallucinations: Hallucinations involving the perception of odour (e.g., of burning rubber, decaying fish, orange peel) in the absence of an actual external stimulus.

MB27.25 Somatic hallucinations: Hallucinations involving the perception of an unusual physical state or event within the body, such as an electrical impulse running down one's arms or an object inside one's chest.

MB27.26 Tactile hallucinations: Hallucinations involving the perception of being touched (e.g., feeling like bugs are crawling on the skin, pins being stuck into one's finger) that are not restricted to the period of awakening or the onset of sleep.

MB27.27 Visual hallucinations: Hallucinations involving sight in the absence of an actual visual stimulus that are not restricted to the period of awakening or the onset of sleep. Visual hallucinations may involve formed images, such as of people, or of unformed images, such as flashes of light. Visual hallucinations must be distinguished from illusions, which are visual misperceptions of real external stimuli.

- C) Disorganized thinking (formal thought disorder) (e.g., tangentiality and loose associations, irrelevant speech, neologisms). When severe, the person's speech may be so incoherent as to be incomprehensible ('word salad').

MB25.0 Symptoms and signs of thought disorder: Disturbances in the associative thought process typically manifest in speech or writing that range from circumstantiality to incoherence. These may be indicative of Schizophrenia and other primary psychotic disorders but can also occur in other mental disorders (e.g., Delirium).

MB25.00 Circumstantiality: A relatively mild disturbance in the associative thought process typically manifest in speech or writing characterised by delay in getting to the point because of the interpolation of unnecessary details and irrelevant parenthetical remarks.

MB25.01 Tangentiality: A disturbance in the associative thought process typically manifest in speech in which the person tends to digress readily from the topic under discussion to other topics through associations without ever returning to the original topic.

MB25.02 Disorganised thinking: A disturbance in the associative thought process typically manifested in speech in which the person shifts suddenly from one topic to another that is unrelated or minimally related to the first. The individual gives no indication of being aware of the disconnectedness or illogicality of their thinking.

MB25.03 Incoherence: Speech or thinking that is so disorganised that it is essentially incomprehensible to others.

MB25.2 Neologisms: The invention of new words that have meaning only to the person using them. May also include the use of existing words in ways that are inconsistent with their common meaning.

D) Experiences of influence, passivity or control (i.e., the experience that one's feelings, impulses, actions or thoughts are not generated by oneself, are being placed in one's mind or withdrawn from one's mind by others, or that one's thoughts are being broadcast to others).

MB26.1 Experiences of influence, passivity, and control: The experience that one's feelings, impulses, thoughts, bodily functions, or behaviour are under the control of another person or other external force instead of under one's own control. These experiences may or may not be accompanied by a delusional belief that provides an explanation for the subjective experience.

MB26.10 Thought broadcasting: The experience that one's thoughts are accessible by others so that others know what one is thinking.

MB26.11 Thought insertion: The experience that certain thoughts are being placed in one's mind by others.

MB26.12 Thought withdrawal: The experience that one's thoughts are being removed by an outside person or force.

E) Negative symptoms such as affective flattening, alogia or paucity of speech, avolition, asociality and anhedonia.

MB22.0 Avolition: A general lack of drive, or lack of motivation to pursue meaningful goals (e.g., as evidenced by limited participation in work, school, or socializing with others).

MB23.K Poverty of speech: A general lack of the unprompted content and elaboration normally seen in speech that is attributed to poverty of thought. It is one of the negative symptoms of Schizophrenia.

MB23.Q Social withdrawal: Retreat from relationships and other social interactions

MB24.2 Anhedonia: Inability to experience pleasure from normally pleasurable activities.

MB24.62 Flat affect: Absence or near absence of any sign of affective expression.

F) Grossly disorganized behaviour that impedes goal-directed activity (e.g., behaviour that appears bizarre or purposeless, unpredictable or inappropriate emotional responses that interferes with the ability to organize behaviour.)

MB23.6 Disorganised behaviour: Behaviour including posture, gait, and other activity that is unpredictable or not goal-directed (e.g., shouting at strangers on the street).

MB24.64 Inappropriate affect: Affective expression that is discordant with the content of the person's speech or ideation, or incompatible with the demands of a particular situation.

- G) Psychomotor disturbances such as catatonic restlessness or agitation, posturing, waxy flexibility, negativism, mutism, or stupor. Note: If the full syndrome of Catatonia is present in the context of Schizophrenia, the diagnosis of Catatonia Associated with Another Mental Disorder should also be assigned.

MB24.F Restlessness: A feeling of being unable to keep still.

MB20.0 Stupor: Total or nearly total lack of spontaneous movement and marked decrease in reactivity to environment.

MB23.D Mutism: A lack of verbal output that may be generalised or restricted to specific situations.

MB28.B Negativism: A tendency to oppose or resist suggestions or advice, or to resist stubbornly for no apparent reason.

Catatonia (Chapter 6)

- Negativism: opposing or behaving contrary to requests or instructions, which may lead to withdrawal from interaction with others (turning away) or refusal to take food or drink when offered.
- Stupor: immobility; no or markedly reduced psychomotor activity; minimally responsive to external stimuli.
- Mutism: no or very little verbal response; speech may be hushed or whispered to the point of being unintelligible.
- Any of the following: extreme hyperactivity or agitation for no reason with nonpurposeful movements and/or uncontrollable, extreme emotional reactions; impulsivity (sudden engagement in inappropriate behaviour without provocation); combativeness (striking out against others usually in an undirected manner, with or without the potential for injury).
- Posturing: spontaneous and active maintenance of a posture against gravity; sitting or standing for long periods without reacting.
- Waxy flexibility: slight and even resistance to positioning by examiner. (Requires examination.)

Appendix B: Summary statistics for the Three Interaction Models

	Estimate	SE	t(df = 5046)	p
Intercept				
Model 1	0.419	0.004	104.419	< 0.0001
Model 2	0.435	0.004	118.481	< 0.0001
Model 3	0.479	0.004	128.742	< 0.0001
Similarity label (1)				
Model 1	0.160	0.006	28.182	< 0.0001
Model 2	0.140	0.005	27.022	< 0.0001
Model 3	0.123	0.005	23.371	< 0.0001
Instrument (within)				
Model 1	-0.019	0.006	-3.118	0.002
Model 2	-0.011	0.005	-1.962	0.050
Model 3	0.023	0.006	4.182	< 0.0001
Interaction effect				
Model 1	-0.006	0.008	-0.690	0.490
Model 2	-0.003	0.008	-0.454	0.650
Model 3	0.008	0.008	1.067	0.286

Appendix C: Type of Symptom Representation in the Instruments

Instrument	Symptoms	Items	Idiosyncratic %	Specific %	Compound %
DSM-5	48	5	-	-	100
ICD-11	50	7	-	-	100
PANSS	59	30	15.25	20.33	79.66
SANS-PS	48	59	2.08	87.50	12.50

Note: *Symptoms*; of the 63 symptoms, how many are represented in the instrument, *Items*; number of individual items in each instrument, *Idiosyncratic*; symptoms that are not represented in any other scale, *Specific*; symptoms that are represented as one item, *Compound*; symptoms that are represented in an item that also represents other symptom(s).

Appendix D: Nosology item similarities per the cosine scores

ICD-11 \ DSM-5	A1	A2	A3	A4	A5
	Delusions	Hallucinations	Dis. thinking	Dis. behaviour	Negative symp.
A – Delusions	0.8381101	-	-	-	-
B – Hallucinations	0.5702633	0.7955619	-	-	-
C – Dis. thinking	0.6097413	-	0.8349668	0.5807693	0.5081696
D – Experiences of influence	0.5814162	0.4989381	-	-	-
E – Negative symptoms	-	-	0.6022251	0.5813533	0.8667213
F – Dis. behaviour	-	-	0.4403419	0.5831511	0.4436673
G – Psychomotor disturbances	0.5543214	-	0.5048287	0.7264351	0.5605873

Note: maximum cosine score for each item is marked in red.