Anxiety, Depression, and Mental Distress in the General Population of Mongolia

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Table S1. The number and percentage of the sample in each age-sex category compared with results from the 2020 Population and Housing By-Census of Mongolia.

Age-sex category		Sample size, n (%)		Population, n (%)	
Total		613	(100)	1910630	(100)
	18-29	118	(19.2)	610322	(31.9)
Both sex	30-44	244	(39.8)	780603	(40.9)
	45-65	251	(40.9)	519705	(27.2)
	18-29	30	(4.9)	273476	(14.3)
Male	30-44	64	(10.4)	364514	(19.1)
	45-65	96	(15.7)	282314	(14.8)
	18-29	88	(14.4)	270846	(14.2)
Female	30-44	180	(29.4)	385836	(20.2)
	45-65	155	(25.3)	333644	(17.4)
Residence location	Rural areas	341	(55.6)	860488	(45.0)
	Urban areas	272	(44.4)	1050142	(55.0)

n: number.

Table S2. Brain Overwork Scale – 10 (BOS-10)

The following questions ask about your thoughts and behaviors in your daily life. There are no right or wrong answers, so please answer honestly and to the best of your ability. If you are unsure about how to answer a question, please choose the answer that feels most like you.

For each question, please indicate how often you have felt or behaved this way in the past week.

#	Questions	1	2	3	4	5
Q1	I did not like to have leisure time					
Q2	I tended to overthink even the (most) minor of events					
Q3	I felt tired when reading newspapers / magazines					
Q4	I tended to walk or move fast					
Q5	I tended to stick to one way of doing or thinking about something					
Q6	I felt that others were watching me					
Q7	I was not good at waiting					
Q8	I had racing thoughts (was thinking something a lot)					
Q9	I easily felt tense in public					
Q10	My notebook was full of schedules					
	Answers					
1	Very inaccurate / Never (0 day per week)					
2	Moderately inaccurate / Rarely (1-2 day(s) per week)					
3	Neutral / Sometimes (3-4 days per week)					
4	Moderately accurate / Frequently (5-6 days per week)					
5	Very accurate / Always (7 days per week)					
	Scoring					
	Total BOS: sum all Q1-Q10					
	Domain1 (Excessive thinking): Q2+Q5+Q8					
	Domain2 (Hypersensitivity): Q3+Q6+Q9					
	Domain3 (Restless behavior): Q1+Q4+Q7+Q10					

Table S3. Cut-off scores of the HADS and BOS (n=613)

Domains	Cut-off point		Sensitivity (%)	Specificity (%)	PPV (%)	NPV (%)	Youden's index
Anxiety AUC: 0.73	>Mean+1SD	9	0.46	0.89	0.51	0.87	0.35
	Clinical	4	0.93	0.25	0.23	0.94	0.18
	Specific	10	0.35	0.93	0.55	0.85	0.28
	Optimal	7	0.71	0.65	0.33	0.90	0.36
Depression AUC: 0.65	>Mean+1SD	9	0.26	0.87	0.33	0.83	0.13
	Clinical	3	0.94	0.12	0.21	0.88	0.06
	Specific	10	0.16	0.92	0.35	0.82	0.09
	Optimal	7	0.55	0.72	0.32	0.87	0.27
HADS Total score AUC: 0. 73	>Mean+1SD	16	0.49	0.84	0.43	0.87	0.33
	Clinical	9	0.91	0.32	0.25	0.93	0.23
	Specific	18	0.30	0.92	0.47	0.84	0.21
	Optimal	12	0.76	0.62	0.33	0.91	0.38
Excessive thinking AUC: 0.75	>Mean+1SD	9	0.55	0.80	0.31	0.92	0.36
	Clinical	6	0.95	0.31	0.18	0.98	0.26
	Specific	11	0.18	0.95	0.36	0.88	0.13
	Optimal	8	0.66	0.71	0.26	0.93	0.37
Hypersensitivity AUC: 0.74	>Mean+1SD	8	0.37	0.85	0.28	0.90	0.22
	Clinical	5	0.90	0.50	0.22	0.97	0.40
	Specific	9	0.24	0.91	0.29	0.88	0.15
	Optimal	6	0.83	0.60	0.25	0.96	0.43
Restless behavior AUC: 0.69	>Mean+1SD	12	0.35	0.76	0.20	0.88	0.13
	Clinical	7	0.92	0.44	0.20	0.97	0.36
	Specific	14	0.16	0.91	0.21	0.87	0.06
	Optimal	8	0.87	0.50	0.21	0.96	0.37
BOS-10 Total score AUC: 0.76	>Mean+1SD	29	0.35	0.87	0.30	0.89	0.22
	Clinical	20	0.92	0.52	0.23	0.97	0.36
	Specific	31	0.19	0.91	0.25	0.88	0.10
	Optimal	21	0.88	0.56	0.24	0.97	0.44

AUC: area under the curve. BOS-10: brain overwork scale-10. HADS: hospital anxiety and depression scale. n: count. NPV: negative predictive value. PPV: positive predictive value. SD: standard deviation.

Table S4. HADS scores by different countries.

Countries	n	Anxiety (cut-off score: 8)	Depression (cut-off score: 8)	Total (cut-off score: 17)
Mongolia (this study)	613	9.2±4.2 (34.5%)	8.2±3.7 (20%)	17.3±6.6 (20.8%)
Colombia (Hinz et al. 2014)	1500	4.6±3.6	4.3±3.9	13.0±7.8
Germany (Hinz et al. 2011)	4410	4.7±3.5 (21%)	4.7±3.9 (23%)	9.5±6.8 (30.2%)
Italy (Iani et al. 2014)	1599	7.6±4.4	5.4±4.0	13.0±7.8
Russia (Kibitov et al. 2021)	2610		4.4±2.8 (14.4%)	
UK (Breeman et al. 2015)	6189	6.2±4.1	3.9±3.7	10.1±7.9
UK (Crawford et al. 2001)	1792	6.1±3.8	3.7±3.1	9.8±6.0

HADS: hospital anxiety and depression scale. n: count.