



Brief assessment of depression: Psychometric properties of the Portuguese version of the Patient Health Questionnaire (PHQ-9)

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Supplementary Material

Exploratory analysis of the Patient Health Questionnaire chart (PHQ-9): Primary health care

Table S1. Matrix of polychoric correlations and matrix of partial correlations related to the exploratory analysis of the network of the Patient Health Questionnaire (PHQ-9) (primary health care)

Item	1	2	3	4	5	6	7	8	9
1 Anhedonia		.680	.321	.432	.208	.325	.331	.284	.498
2 Depressed mood	.431		.253	.435	.127	.359	.371	.365	.502
3 Sleep Problems	.047	.000		.311	.174	.264	.301	.283	.358
4 Fatigue	.120	.119	.075		.249	.112	.452	.338	.277
5 Appetite changes	.000	.000	.000	.058		.180	.105	.293	.028
6 Self-devaluation	.000	.000	.000	.000	.000		.272	.340	.679
7 Difficulty in concentration	.000	.042	.049	.209	.000	.000		.477	.378
8 Psychomotor retardation or agitation	.000	.069	.043	.042	.113	.078	.247		.325
9 Suicide ideation	.144	.140	.099	.000	.000	.474	.078	.000	

Note. The table section above the diagonal line shows the values for the polychoric correlations between the PHQ-9 items. The section of the table below the diagonal line shows the values relative to the median partial correlations between the PHQ-9 items.

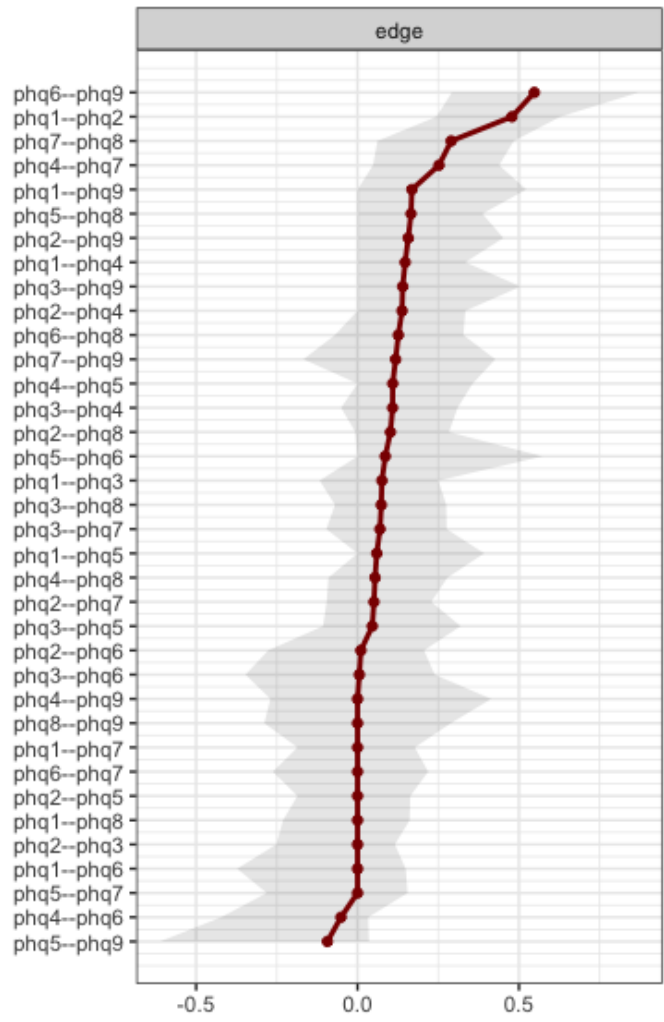


Figure S1. 95%CI for the partial correlations of the Patient Health Questionnaire (PHQ-9) network (primary health care)

Semi-confirmatory factorial analysis of the Patient Health Questionnaire (PHQ-9): Primary health care

Table S2. Matrix of polychoric correlations related to the semi-confirmatory factorial analysis of the Patient Health Questionnaire (PHQ-9) (primary health care)

Item	1	2	3	4	5	6	7	8	9
1 Anhedonia	1.000								
2 Depressed mood	.626	1.000							
3 Sleep Problems	.312	.257	1.000						
4 Fatigue	.431	.402	.314	1.000					
5 Appetite changes	.213	.128	.178	.247	1.000				
6 Self-devaluation	.332	.327	.265	.112	.179	1.000			
7 Difficulty in concentration	.303	.340	.307	.446	.100	.275	1.000		
8 Psychomotor retardation or agitation	.278	.321	.277	.294	.288	.340	.480	1.000	
9 Suicide ideation	.397	.382	.282	.172	.050	.627	.354	.344	1.000

Exploratory analysis of the Patient Health Questionnaire network (PHQ-9): University clinic

Table S3. Matrix of polychoric correlations and matrix of partial correlations related to the exploratory analysis of the network of the Patient Health Questionnaire (PHQ-9) (university clinic)

Item	1	2	3	4	5	6	7	8	9
1 Anhedonia		.869	.281	.626	.354	.741	.627	.461	.547
2 Depressed mood	.479		.476	.565	.384	.781	.660	.570	.618
3 Sleep Problems	.000	.077		.489	.418	.446	.286	.296	.350
4 Fatigue	.151	.034	.171		.521	.591	.471	.413	.514
5 Appetite changes	.000	.000	.109	.164		.392	.445	.577	.499
6 Self-devaluation	.195	.304	.070	.130	.000		.531	.350	.478
7 Difficulty in concentration	.112	.144	.000	.000	.000	.000		.562	.612
8 Psychomotor retardation or agitation	.000	.095	.000	.000	.278	.000	.178		.517
9 Suicide ideation	.005	.124	.000	.091	.118	.000	.236	.093	

Note. The table section above the diagonal line shows the values for the polychoric correlations between the PHQ-9 items. The section of the table below the diagonal line shows the values relative to the median partial correlations between the PHQ-9 items.

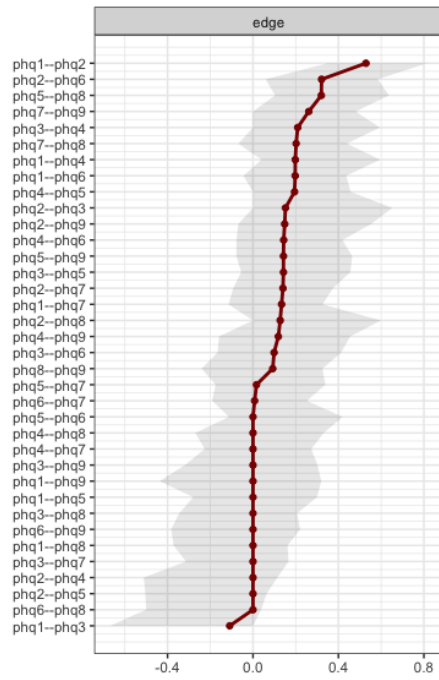


Figure S2. 95%CI for the partial correlations of the Patient Health Questionnaire (PHQ-9) network (university clinic)

Semi-confirmatory factorial analysis of the Patient Health Questionnaire (PHQ-9): University clinic

Table S4. Matrix of polychoric correlations related to the semi-confirmatory factorial analysis of the Patient Health Questionnaire (PHQ-9) (university clinic)

Item	1	2	3	4	5	6	7	8	9
1 Anhedonia	1.000								
2 Depressed mood	.812	1.000							
3 Sleep Problems	.265	.435	1.000						
4 Fatigue	.582	.518	.447	1.000					
5 Appetite changes	.361	.384	.382	.485	1.000				
6 Self-devaluation	.696	.737	.447	.584	.384	1.000			
7 Difficulty in concentration	.573	.610	.282	.436	.445	.526	1.000		
8 Psychomotor retardation or agitation	.416	.509	.267	.371	.548	.352	.527	1.000	
9 Suicide ideation	.453	.507	.288	.423	.460	.425	.554	.496	1.000

Information regarding the Patient Health Questionnaire (PHQ-9)

Table S5. Characteristics of the Patient Health Questionnaire items (PHQ-9)

Study	Item	Average Scale if Item is Deleted	Variance of Scale if Item is Deleted	Corrected Item-Total Correlation	Multiple to Square Correlation	Cronbach's Alpha if Item is Deleted (99%CI BCa)	Omega Categorical if Item is Deleted (99%CI BCa)
Primary health care	1	9.634	21.168	.544	.453	.704 (.591, .788)	.742 (.598, .827)
	2	9.523	21.698	.536	.449	.707 (.604, .793)	.744 (.604, .831)
	3	9.458	21.539	.381	.157	.733 (.636, .805)	.786 (.649, .865)
	4	9.242	21.645	.460	.281	.718 (.617, .797)	.763 (.617, .842)
	5	9.824	23.291	.237	.118	.757 (.669, .829)	.803 (.662, .872)
	6	10.183	21.769	.395	.304	.730 (.626, .806)	.742 (.600, .833)
	7	10.007	21.454	.469	.288	.716 (.613, .797)	.742 (.595, .827)
	8	10.275	22.003	.459	.255	.719 (.616, .797)	.742 (.599, .834)
	9	10.850	23.826	.414	.309	.729 (.628, .807)	.742 (.605, .830)
University clinic	1	10.806	33.186	.689	.681	.847 (.770, .898)	.883 (.784, .924)
	2	10.796	32.369	.773	.738	.839 (.756, .894)	.877 (.755, .925)
	3	10.824	36.445	.436	.312	.870 (.804, .914)	.912 (.819, .952)
	4	10.833	34.720	.622	.441	.854 (.788, .899)	.897 (.784, .944)
	5	11.241	34.913	.524	.368	.863 (.797, .906)	.894 (.811, .931)
	6	11.065	33.295	.662	.548	.850 (.779, .898)	.891 (.762, .936)
	7	11.213	34.150	.637	.454	.852 (.776, .900)	.897 (.790, .947)
	8	11.528	35.167	.537	.395	.862 (.798, .907)	.894 (.785, .936)
	9	11.917	36.245	.566	.344	.859 (.781, .909)	.901 (.752, .947)

Note. 99%CI BCa = Bias corrected and accelerated confidence intervals for 99% confidence.

Information regarding the Patient Health Questionnaire (PHQ-9)

Table S6. Z and T scores & percentiles related to the Patient Health Questionnaire (PHQ-9)

Total Score	Primary Health Care				University Clinic				Total			
	Z	T	Frequency	Percentile	Z	T	Frequency	Percentile	Z	T	Frequency	Percentile
0	-2.14	29	2	1	-1.91	31	1	0	-2.01	30	3	1
1	-1.95	31	1	2	-1.76	32	7	4	-1.84	32	8	3
2	-1.75	32	5	4	-1.61	34	1	8	-1.67	33	6	5
3	-1.56	34	3	6	-1.45	35	3	10	-1.49	35	6	8
4	-1.37	36	1	8	-1.30	37	1	12	-1.32	37	2	9
5	-1.18	38	7	10	-1.15	39	2	13	-1.15	38	9	11
6	-0.99	40	11	16	-1.00	40	6	17	-0.98	40	17	16
7	-0.79	42	6	22	-0.84	42	8	23	-0.81	42	14	22
8	-0.60	44	14	28	-0.69	43	2	28	-0.64	44	16	28
9	-0.41	46	20	39	-0.54	45	2	30	-0.46	45	22	35
10	-0.22	48	4	47	-0.39	46	5	33	-0.29	47	9	41
11	-0.02	50	9	51	-0.23	48	8	39	-0.12	49	17	46
12	0.17	52	12	58	-0.08	49	12	48	0.05	51	24	54
13	0.36	54	10	65	0.07	51	4	56	0.22	52	14	61
14	0.55	56	6	71	0.22	52	5	60	0.39	54	11	66
15	0.75	57	7	75	0.38	54	3	63	0.57	56	10	70
16	0.94	59	10	80	0.53	55	7	68	0.74	57	17	75
17	1.13	61	7	86	0.68	57	5	74	0.91	59	12	81
18	1.32	63	5	90	0.83	58	6	79	1.08	61	11	85
19	1.51	65	4	93	0.99	60	4	83	1.25	63	8	89
20	1.71	67	3	95	1.14	61	3	87	1.42	64	6	92
21	1.90	69	2	97	1.29	63	2	89	1.59	66	4	93
22	2.09	71	0	97	1.45	64	2	91	1.77	68	2	95
23	2.28	73	3	98	1.60	66	3	93	1.94	69	6	96
24	2.48	75	0	99	1.75	68	2	95	2.11	71	2	98
25	2.67	77	1	100	1.90	69	3	98	2.28	73	4	99
26	---	---	---	---	2.06	71	0	99	2.45	75	0	100
27	---	---	---	---	2.21	72	1	100	2.62	76	1	100

Note. The information was calculated on bases of the omega categorical for a 99% confidence interval: .788 (99%CI BCa [.661 – .857]) for primary health care, .837 (99%CI BCa [.760 – .876]) for the university clinic and .837 (99%CI BCa [.760 – .876]) for the complete sample.

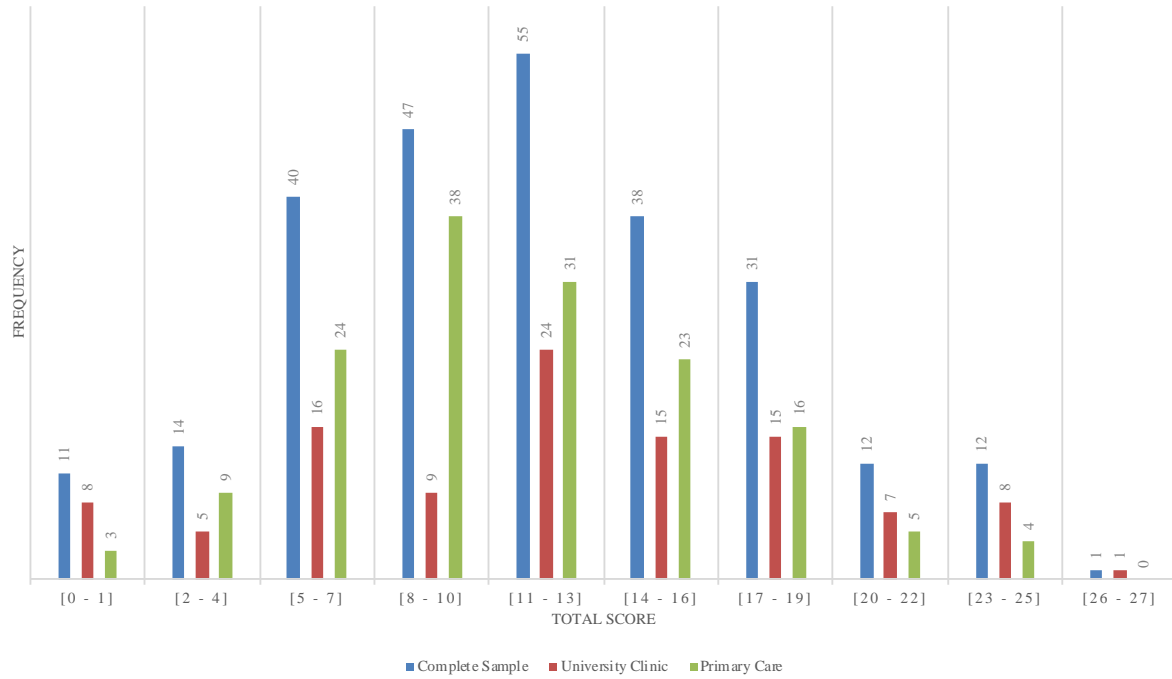


Figure S3. Distribution of total scores in the Patient Health Questionnaire (PHQ-9) in primary health care and the university clinic

Cut-off points for identifying Major Depressive Disorder in the Patient Health Questionnaire (PHQ-9)

Table S7. Confidence intervals for the sensitivity and specificity of several cut-off points for identifying Major Depressive Disorder in the Patient Health Questionnaire (PHQ-9)

Cutoff	Sensitivity (99%CI)	Specificity (99%CI)
3	.344 (.105, .600)	1.000 (1.000, 1.000)
5	.462 (.200, .714)	.988 (.948, 1.000)
6	.500 (.240, .760)	.976 (.925, 1.000)
7	.696 (.448, .909)	.964 (.900, 1.000)
8	.850 (.636, 1.000)	.917 (.827, .987)
9	.889 (.696, 1.000)	.904 (.808, .976)
13	.927 (.762, 1.000)	.588 (.443, .727)
17	.964 (.833, 1.000)	.367 (.229, .507)
19	1.000 (1.000, 1.000)	.244 (.128, .371)