

*Supplementary material*

## Combination Use of Beck Depression Inventory and Two- Question Case-Finding Instrument as a Screening Tool for Depression in the Workplace

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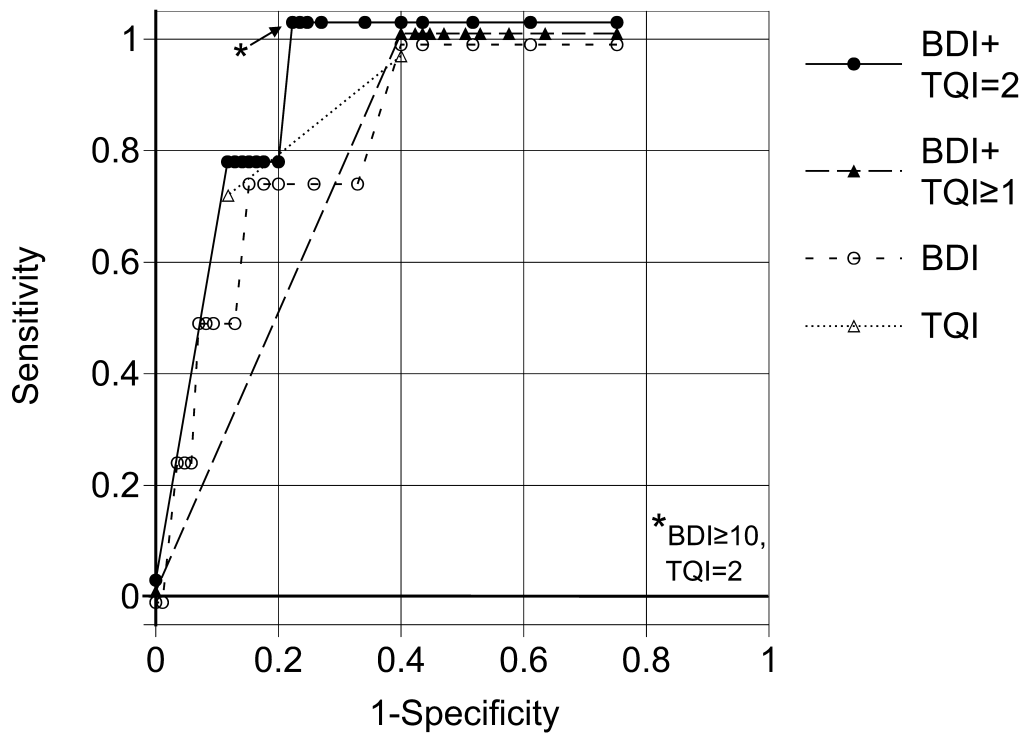
Supplementary table 1.

Demographic data of participants

	Group1 (N=89)		Group 2 (N=1500)	
	N	%	N	%
Sex				
Male	81	91.0	1408	93.9
Female	8	9.0	92	6.1
Age				
-19	0	0	0	0
20-29	7	7.9	54	3.6
30-39	44	49.4	655	43.7
40-49	32	36.0	573	38.2
50-59	6	6.7	213	14.2
60-	0	0	5	0.3

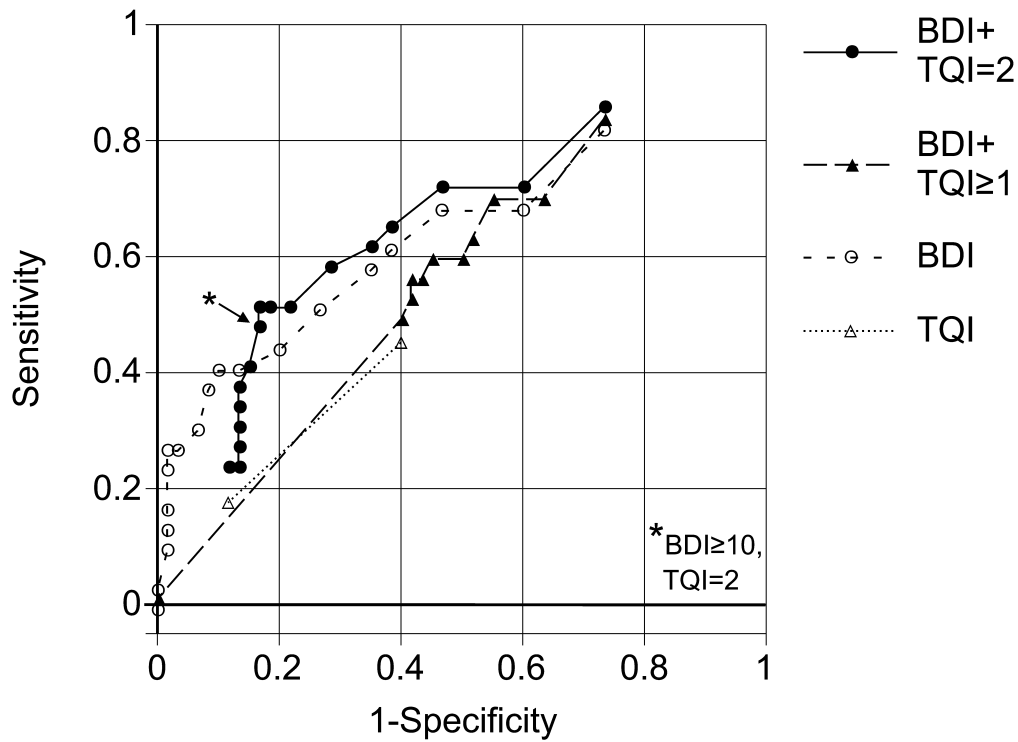
Supplementary figure 1.

Receiver Operation Characteristic curves for all possible cutoff scores of Beck Depression Inventory (BDI), two-question case-finding instrument (TQI), and all possible pairs of cutoff scores of BDI and TQI to identify workers who were diagnosed as having major depressive disorder. The points and corresponding lines in this figure are shifted to avoid overlapping by adding 0.03, 0.01, -0.01 and -0.03 to the sensitivity values of the groups of BDI + TQI = 2, BDI + TQI ≥ 1, BDI and TQI, respectively.



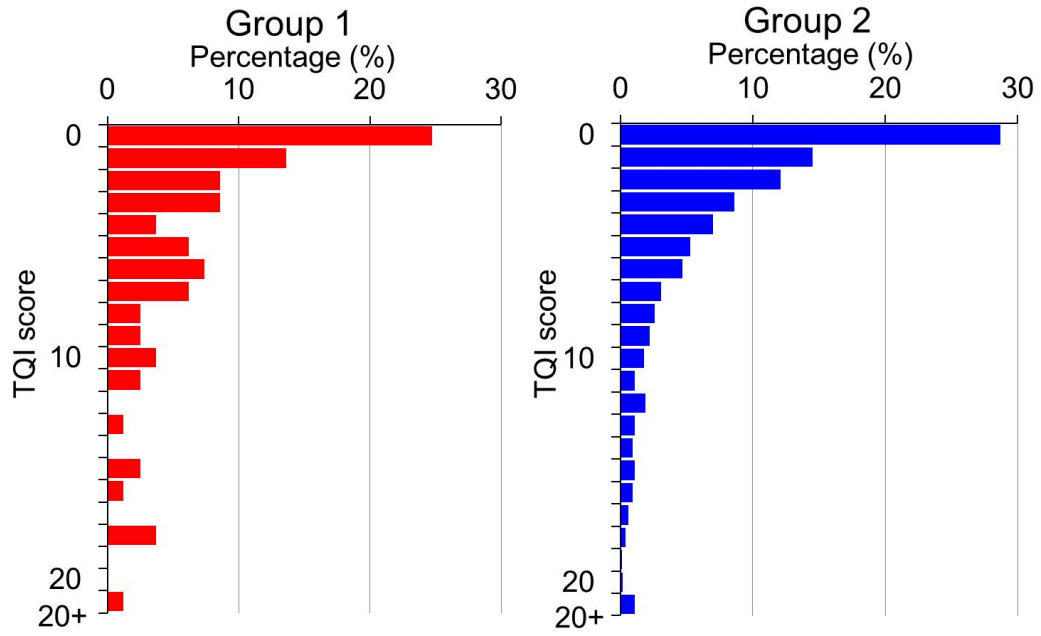
Supplementary figure 2.

Receiver Operation Characteristic curves for all possible cutoff scores of Beck Depression Inventory (BDI), two-question case-finding instrument (TQI), and all possible pairs of cutoff scores of BDI and TQI to identify both workers who were diagnosed as having major depressive disorder (MDD) and those who were not diagnosed as having MDD but having other psychiatric disorders frequently comorbid with MDD. The points and corresponding lines in this figure are shifted to avoid overlapping by adding 0.03, 0.01, -0.01 and -0.03 to the sensitivity values of the groups of  $BDI + TQI = 2$ ,  $BDI + TQI \geq 1$ , BDI and TQI, respectively.



Supplementary figure 3.

Frequency distributions of Beck Depression Inventory in the male only sample



Supplementary table 2

Frequency distributions of two-question case-finding instrument in the male only sample

Number of 'yes' answers	Group 1		Group 2	
	N	%	N	%
0	47	58.0	1033	73.4
1	23	28.4	213	15.1
2	11	13.6	162	11.5

Supplementary table 3

The diagnoses of male participants in Group 1 according to Mini-International Neuropsychiatric Interview

Diagnosis	N	%
No diagnosis	54	66.7
Substance use disorder	16	19.8
Anxiety disorder	5	6.2
Major depressive disorder	2	2.5
Bipolar disorder	1	1.2
Dysthymia	1	1.2
Bipolar disorder + Substance use disorder	1	1.2
Major depressive disorder + Substance use disorder + Anxiety disorder	1	1.2

Supplementary table 4

The sensitivity, specificity, positive predictive value (PPV), and Youden Indices for all possible cutoff scores for Beck Depression Inventory (BDI), two-question case-finding instrument (TQI), and all possible pairs of cutoff scores of BDI and TQI to identify workers who were diagnosed with major depressive disorder in the male only sample.

	Sensitivity	Specificity	PPV	Youden Index	
<b>BDI cutoff score</b>					
4	100	57.7	8.3	0.577	
5	100	61.5	9.1	0.615	
6	100	67.9	10.7	0.679	
7	100	75.6	13.6	0.756	
8	100	82.1	17.6	0.821	
9	100	84.6	20.0	0.846	
10	100	87.2	23.1	0.872	
11	66.7	89.7	20.0	0.564	
12	66.7	92.3	25.0	0.590	
13	66.7	92.3	25.0	0.590	
14	66.7	93.5	28.6	0.603	
15	66.7	93.5	28.6	0.603	
16	33.3	94.9	20.0	0.282	
17	33.3	96.2	25.0	0.295	
18	33.3	96.2	25.0	0.295	
<b>TQI cutoff score</b>					
1	100	60.3	8.8	0.603	
2	66.7	88.5	18.2	0.551	
<b>Pairs of cutoff scores</b>					
<b>BDI</b>	<b>TQI</b>				
4	2	100	57.7	8.3	0.577
5	2	100	61.5	9.1	0.615
6	2	100	66.7	10.3	0.667
7	2	100	74.4	13.0	0.744
8	2	100	76.9	14.3	0.769
9	2	100	78.2	15.0	0.782
10	2	100	79.5	15.8	0.795
11	2	66.7	82.1	12.5	0.487
12	2	66.7	83.3	13.3	0.500
13	2	66.7	83.3	13.3	0.500
14	2	66.7	84.6	14.3	0.513
15	2	66.7	84.6	14.3	0.513
16	2	66.7	85.9	15.4	0.526
17	2	66.7	87.2	16.7	0.538
18	2	66.7	87.2	16.7	0.538
4	1	100	47.4	6.8	0.474
5	1	100	50.0	7.1	0.500
6	1	100	53.8	7.7	0.538
7	1	100	56.4	8.1	0.564
8	1	100	57.7	8.3	0.577
9	1	100	57.7	8.3	0.577

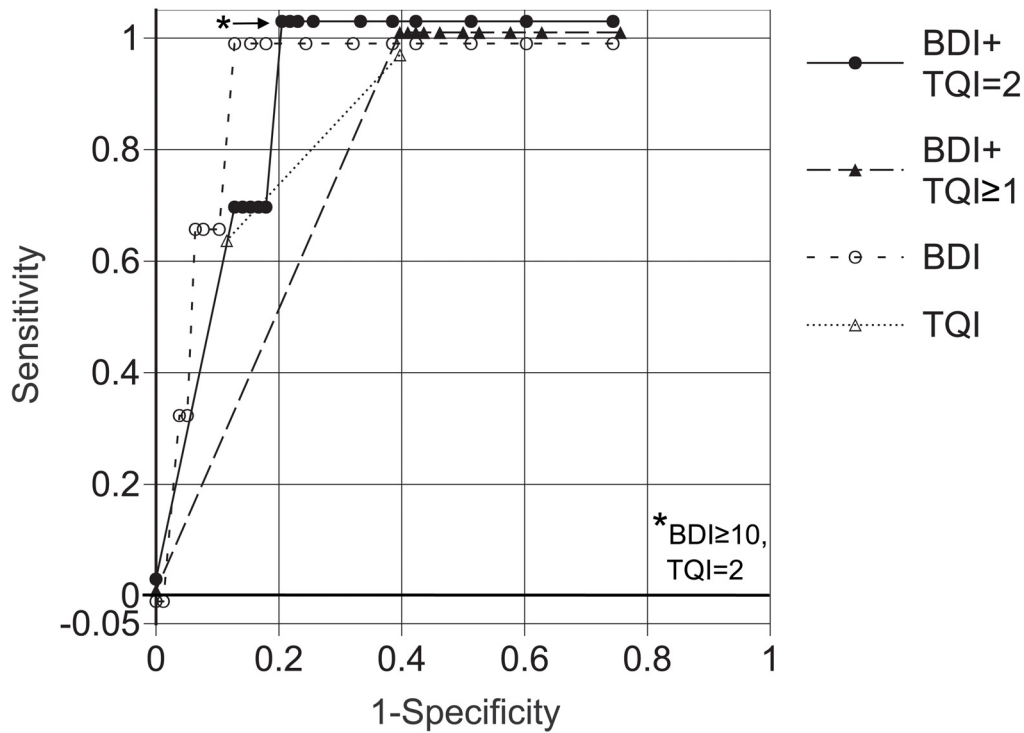


10	1	100	59.0	8.6	0.590
11	1	100	59.0	8.6	0.590
12	1	100	60.3	8.8	0.603
13	1	100	60.3	8.8	0.603
14	1	100	60.3	8.8	0.603
15	1	100	60.3	8.8	0.603
16	1	100	60.3	8.8	0.603
17	1	100	60.3	8.8	0.603
18	1	100	60.3	8.8	0.603

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Supplementary figure 4.

Receiver Operation Characteristic curves for all possible cutoff scores of Beck Depression Inventory (BDI), two-question case-finding instrument (TQI), and all possible pairs of cutoff scores of BDI and TQI to identify workers who were diagnosed as having major depressive disorder in the male only sample. The points and corresponding lines in this figure are shifted to avoid overlapping by adding 0.03, 0.01, -0.01 and -0.03 to the sensitivity values of the groups of BDI + TQI = 2, BDI + TQI  $\geq$  1, BDI and TQI, respectively.



Supplementary table 5

The sensitivity, specificity, positive predictive value (PPV), and Youden Indices for all possible cutoff scores for Beck Depression Inventory (BDI), two-question case-finding instrument (TQI), and all possible pairs of cutoff scores BDI and TQI to identify both workers who were diagnosed as having major depressive disorder (MDD) and those who were not diagnosed as having MDD but had other psychiatric disorders frequently comorbid with MDD in the male only sample.

	Sensitivity	Specificity	PPV	Youden Index	
BDI cutoff score					
4	59.3	63.0	44.4	0.222	
5	55.6	66.7	45.5	0.222	
6	51.9	74.1	50.0	0.259	
7	44.4	81.5	54.5	0.259	
8	40.7	88.9	64.7	0.296	
9	40.7	92.6	73.3	0.333	
10	37.0	94.4	76.9	0.315	
11	29.6	96.3	80.0	0.259	
12	25.9	98.1	87.5	0.259	
13	25.9	98.1	87.5	0.201	
14	22.2	98.1	85.7	0.201	
15	22.2	98.1	85.7	0.224	
16	14.8	98.1	80.0	0.130	
17	11.1	98.1	75.0	0.093	
18	11.1	98.1	75.0	0.093	
TQI cutoff score					
1	44.4	59.3	35.3	0.037	
2	18.5	88.9	45.5	0.074	
Pairs of cutoff scores					
BDI	TQI				
4	2	59.3	63.0	44.4	0.222
5	2	55.6	66.7	45.5	0.222
6	2	51.9	72.2	48.3	0.241
7	2	44.4	79.6	52.2	0.241
8	2	44.4	83.3	57.1	0.278
9	2	44.4	85.2	60.0	0.296
10	2	44.8	85.2	57.9	0.259
11	2	33.3	87.0	56.3	0.204
12	2	29.6	87.0	53.3	0.167
13	2	29.6	87.0	53.3	0.167
14	2	25.9	87.0	50.0	0.130
15	2	25.9	87.0	50.0	0.130
16	2	22.2	87.0	46.2	0.093
17	2	18.5	87.0	41.7	0.056
18	2	18.5	87.0	41.7	0.056
4	1	59.3	48.1	36.4	0.074
5	1	55.6	50.0	35.7	0.056
6	1	55.6	55.6	38.5	0.111

7	1	51.9	57.4	37.8	0.093
8	1	51.9	59.3	38.9	0.111
9	1	51.9	59.3	38.9	0.111
10	1	48.1	59.3	37.1	0.074
11	1	48.1	59.3	37.1	0.074
12	1	44.4	59.3	35.2	0.037
13	1	44.4	59.3	35.2	0.037
14	1	44.4	59.3	35.2	0.037
15	1	44.4	59.3	35.2	0.037
16	1	44.4	59.3	35.2	0.037
17	1	44.4	59.3	35.2	0.037
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