Supplementary Information

Differences in metacognitive functioning between obsessive-compulsive disorder patients and highly compulsive individuals from the general population.

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Correlations between questionnaire scores

	RSES	OCI-R	MCQ-30	DASS	ZUNGDEP	GAD-7
ASA	.77***	-.47***	-.65***	-.75***	-.55***	-.58***
RSES		-.54***	-.66***	-.71***	-.60***	-.68***
OCI-R			.72***	.76***	.53***	.35*
MCQ-30				.80***	-	-
DASS					-	-
ZUNGDEP						.66***

Supplementary Table 1: Correlations between questionnaire scores. Spearman correlation coefficients between questionnaire scores. For the correlations between rSES, OCI-R and ASA, all 120 subjects were included. For the correlations including MCQ-30 and DASS, only the 80 participants in the OCD and HC group were included. For the correlations including the ZungDEP and GAD-7 questionnaires only the HComp group was included. Abbreviations: OCD = Obsessive-Compulsive Disorder, HCs = Healthy Controls, HComp = High-Compulsive subjects, OCI-R: Obsessive-Compulsive Inventory-Revised, ASA: Autonomy Scale Amsterdam, rSES: Rosenberg Self-Esteem Scale, DASS: Depression Anxiety and Stress Scale, GAD-7: Generalized Anxiety Disorder-7 Questionnaire, ZungDEP: Zung's Depression scale, * = p<.05, ** = p<.01, *** = p<.001.

Comparing highly compulsive subjects to healthy controls

The healthy control (HC) group performed significantly better on the task compared to the highly compulsive (HComp) group, and were also significantly more confident at both local and global levels (Supplementary Table 2). Even though the HComp group had higher local and global calibration values, and both groups showed overconfidence, this did not differ significantly between the groups. Also, no group differences in discrimination or the correlation between local and global confidence were found. Together, this shows that the HComp group is just as overconfident in their abilities as the HC group, even though the HComp group performs worse and is less confident overall.

	HCs (N = 40)	HComp (N=40)	HC vs. HComp
Age in years	38.58 (11.11)	36.53 (12.73)	T = 0.77 P = 0.45
Females (%)	27 (67.5%)	28 (70%)	X2 = 0.06 P = 0.81
Years of education	10.20 (3.13)	10.35 (2.64)	T = -0.23 P = 0.82
OCI-R	2.90 (2.48)	23.35 (13.18)	T = -9.65 P < .001
ASA	168.13 (19.18)	160.35 (33.99)	T = 1.26 P = 0.21
rSES	23.48 (3.94)	18.53 (7.56)	T = 3.67 P < .001
Accuracy (percent correct)	76.49 (7.76)	69.90 (8.64)	F = 13.15 P < 0.001
Local Confidence (on 50-100 scale)	81.14 (8.11)	76.82 (9.58)	F = 4.76 P = 0.032
Global Confidence	80.69 (7.27)	76.21 (8.83)	F = 6.08 P = 0.016
Local Calibration	4.82 (8.92)	6.63 (11.22)	T = 0.80 P = 0.429
Global Calibration	4.20 (6.98)	6.31 (9.62)	T = 1.13 P = 0.264
Correlation Local & Global Confidence	0.56	0.52	T = -0.60 P = 0.552
Discrimination	8.34 (4.77)	6.73 (4.66)	T = -1.53 P = 0.130

Supplementary Table 2: Differences in demographics, clinical data and task performance between HC and HComp groups. Abbreviations: HCs = Healthy Controls, HComp = High-Compulsive subjects, OCI-R: Obsessive-Compulsive Inventory-Revised, ASA: Autonomy Scale Amsterdam, rSES: Rosenberg Self-Esteem Scale, T = T-value from two-sample t-test, F = F-value from ANOVA, P = P-value. Data are reported as mean (standard deviation).

Comparing OCD and HC groups while controlling for anxiety and depression symptoms

Dependent Variable	Intercept	DASS score	Group (OCD)
Local confidence	β = 82.193 SE = 1.659 T = 49.533 P < .001	β = 1.391 SE = 1.401 T = 0.993 P = 0.324	β = -8.508 SE = 2.785 T = -3.055 P = 0.003
Global confidence	β = 81.480 SE = 1.505 T = 54.141 P < .001	β = 1.041 SE = 1.271 T = 0.819 P = 0.415	β = -6.027 SE = 2.526 T = -2.386 P = 0.020
Local calibration	β = 7.872 SE = 2.098 T = 3.753 P < .001	β = 4.030 SE = 1.772 T = 2.275 P = 0.026	β = -11.091 SE = 3.521 T = -3.150 P = 0.002
Global calibration	β = 6.315 SE = 1.604 T = 3.938 P < .001	β = 2.798 SE = 1.354 T = 2.066 P = 0.042	β = -7.234 SE = 2.691 T = -2.688 P = 0.009

Supplementary Table 3: Regression results from models comparing OCD and HC groups while controlling for anxiety and depression symptoms. Abbreviations: HC = Healthy Controls, OCD = Obsessive compulsive disorder, DASS: Depression Anxiety Stress Scale, SE = Standard Error, T = T-value, P = P-value.

Comparing the effect of OCI-R score on local confidence between OCD and HComp groups

Local Confidence ~	Intercept	OCI-R score	Group (HComp)	Group (HComp) x OCI-R score
β	74.724	-2.508	2.086	4.034
SE	1.388	1.698	1.963	2.087
T	53.830	- 1.477	1.063	1.933
P	<.001	0.144	0.291	0.057

Supplementary Table 4: Regression results from model comparing the effects of OCI-R score on local confidence between OCD and HComp groups. Abbreviations: HComp = Highly compulsive subjects, OCD = Obsessive compulsive disorder, OCI-R: Obsessive-Compulsive Inventory-Revised, SE = Standard Error, T = T-value, P = P-value.

Comparing M-Ratio (metacognitive efficiency) between groups

For the sake of completeness, we calculated metacognitive efficiency for each participant. The signal detection theory framework assumes constant signal strength, and therefore metacognitive efficiency (i.e. M-Ratio) was calculated separately for the easy and hard trials (36 trials per subject per M-Ratio calculation). The M-Ratio was taken as the average M-Ratio over the easy and hard condition, and compared between groups using two-sample t-tests. Some subjects (8 OCD, 2 HC, 6 HComp) with a negative M-Ratio likely due to the low number of trials to estimate M-Ratio, were excluded for these analyses.

The average M-Ratio for OCD patients was 0.859, for HC it was 0.927, and for Hcomp it was 1.11. There were no differences in M-Ratio between the OCD and HC groups (t_{68} = 0.487, p = 0.628), and neither between the OCD and HComp groups (t_{64} = 1.136, p = 0.260).