*Supplementary Material*

# TABLE S1- Remained variables that entered the analysis after meticulous review of the CTOC dataset.

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| Remained variables that entered the analysis | | | |
| Subject number | Lifetime suicide thought | Presence of any sensory phenomena | Lifetime Somatization disorder |
| Age | Lifetime suicide plan | Course of OCS symptoms | Lifetime Body Dysmorphic disorder |
| Gender | Lifetime suicide attempt | Age at OCS onset | Lifetime Eating disorder |
| Body mass index | Familial history of suicide attempt | Depressive symptoms severity (BDI) | Lifetime Anorexia |
| Marital status | Familial history of suicide | Anxious symptoms severity (BAI) | Lifetime Bulimia |
| Offspring | Social Class | Insight level (BABS) | Lifetime Binge eating disorder |
| Live alone | DY-BOCS symptom dimension of aggressivity | Lifetime tics | Lifetime Intermittent Explosive disorder |
| Religion | DY-BOCS symptom dimension of sex/religion | Lifetime Tourette Syndrome | Lifetime Kleptomania |
| Practice religion | DY-BOCS symptom dimension of symmetry/order | Lifetime ADHD | Lifetime Compulsive Buying disorder |
| Occupation | DY-BOCS symptom dimension of contamination/wash | Lifetime Separation Anxiety | Lifetime “Grooming” behavior disorder (Trichotillomania + Skin Picking) |
| Ethnicity | DY-BOCS symptom dimension of hoarding | Lifetime Major Depression | Familial history of any psychiatric disorder |
| Number of studied years | DY-BOCS miscellanea symptom dimension | Lifetime Bipolar I disorder | Familial history of alcohol related disorder |
| Lifetime convulsion | DY-BOCS severity subscore of aggressivity dimension | Lifetime Bipolar II disorder | Familial history of other substance related disorder |
| Lifetime migraine | DY-BOCS severity subscore of sex/religion dimension | Lifetime Alcohol dependence disorder | Familial history of Panic/Agoraphobia disorder |
| Lifetime use of SSRI | DY-BOCS severity subscore of symmetry/order dimension | Lifetime canaabis dependence disorder | Familial history of Social Anxiety disorder |
| Lifetime use of Clomipramine | DY-BOCS severity subscore of contamination/wash dimension | Lifetime other substances dependence disorder | Familial history of Simple Phobia disorder |
| Lifetime use of other antidepressants | DY-BOCS severity subscore of hoarding dimension | Lifetime Panic/Agoraphobia disorder | Familial history of any Eating Disorder |
| Lifetime use of benzodiazepines | DY-BOCS severity subscore of miscellanea dimension | Lifetime Social Anxiety disorder | Familial history of ADHD |
| Lifetime use of neuroleptics | DY-BOCS severity total score | Lifetime Simple Anxiety disorder | Familial history of Major Depression |
| Lifetime use of mood stabilizers | Y-BOCS obsessions subscore | Lifetime PTSD | Familial history of Bipolar Disorder |
| Lifetime use of lithium | Y-BOCS compulsions subscore | Lifetime any trauma history | Familial history of any Psychotic Disorder |
| Lifetime electroconvulsive therapy | Y-BOCS total score | Lifetime General Anxiety disorder | Familial history of PTSD and Familial history of OCD |

# OCS – Obsessive Compulsive Symptoms; OCD = Obsessive Compulsive Disorder; DY-BOCS = Dimensional Yale-Brown Obsessive Compulsive Scale; Y-BOCS = Yale-Brown Obsessive Compulsive Scale; BABS = Brown Assessment of Beliefs Scale; BDI = Beck Depression Inventory; BAI = Beck Anxiety Inventory; PTSD = Post Traumatic Stress Disorder; ADHD = Attention Deficit Hyperactivity Disorder.

**FIGURE S1 -** Machine Learning protocol.