

# INPLASY PROTOCOL

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None declared.

## Theory of mind and empathy in obsessive-compulsive disorder: A meta-analysis

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**Review question / Objective:** The present study aimed to provide the first meta-analytic integration of broader empathy and ToM in OCD with the affective and cognitive subcomponents of both these abilities distinguished.

**Condition being studied:** Obsessive-compulsive disorder (OCD) is a psychiatric disorder characterized by frequent, unwanted thoughts (obsessions) and/or repetitive, ritualistic behaviors (compulsions), and usually aimed at eliminating anxiety. According to the World Health Organization, OCD is one of ten physical and mental illnesses that affect functioning negatively, affecting approximately 2.5–3% of the general population and posing a major burden on social economy. In OCD, social cognitive impairment has been recognized as a common symptom. ToM, one core aspect of social cognition, is a complex construct with multiple components, usually including affective and cognitive domains. Another core aspect of social cognition, empathy can also be divided into affective and cognitive components. Recently, several studies have assessed ToM and empathy deficits in patients with OCD with inconsistent findings.

**INPLASY registration number:** This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 21 September 2022 and was last updated on 21 September 2022 (registration number INPLASY202290101).

### INTRODUCTION

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## METHODS

**Participant or population:** Patients with OCD. No restrictions on sex, ethnicity, education or economic status.

**Intervention:** Studies compare ToM and empathy performance between patients with OCD and healthy controls.

**Comparator:** ToM and empathy performance.

**Study designs to be included:** Case-control studies.

**Eligibility criteria:** Studies were included if they met the following four criteria: First, the study was published as a peer-reviewed research article in English. Second, the study assessed ToM or empathy performance. Third, sufficient data to calculate effect sizes and standard errors of the ToM measures were reported. Fourth, a matched HC group was included.

**Information sources:** Two independent authors searched the following electronic databases: PubMed, Web of Science and Embase. The search was from inception to June 2022 with no restriction of publication dates. In addition, other resources were

searched manually, such as the references of all included studies.

**Main outcome(s):** the measures of empathy and ToM and the data used for calculating the effect sizes and standard errors of the empathy and ToM measures.

**Additional outcome(s):** Other outcomes included demographic factors as well as some clinical features of OCD.

**Quality assessment / Risk of bias analysis:** The quality of all included studies were assessed by Newcastle-Ottawa Quality Assessment Scale (NOS).

**Strategy of data synthesis:** The data analysis and quantitative data synthesis were performed by Stata 15.0 software. The mean effect size (Hedge's  $g$ ) and 95% confidence intervals (CI) were used to evaluate the performance of ToM and empathy.

**Subgroup analysis:** If the heterogeneity of the results is high and the data are sufficient, we will perform a subgroup analysis on the data in order to find the cause of the large heterogeneity.

**Sensitivity analysis:** If publication bias was found, we will apply the trim-and-fill method to provide effect sizes adjusted for publication bias.

**Language restriction:** English.

**Country(ies) involved:** China.

**Keywords:** obsessive-compulsive disorder, theory of mind, empathy, meta-analysis

### Contributions of each author:

Author 1 - Ming Li - The author drafted the manuscript.

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Author 3 - Jing Zhao - The author contributed to the development of the

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selection criteria, the risk of bias assessment strategy, and data extraction.

Author 4 - YaNan Ji - The author provided statistical expertise.

Author 5 - ZhongQuan Yi - The author contributed to conception, design, data analysis, and writing the manuscript.

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