

The neural basis of Magical Ideation: A multimodal imaging study in twin subjects

ABSTRACT:

Background

Sub-threshold psychotic symptoms are quite commonly present in general population. Among these, Magical Ideation (MI) has been proved to be a valid predictor of psychosis. However, the genetic and environmental influences on the interplay between MI and personality have not fully been explored.

Aims

To explore the genetic and environmental bases of the interplay between magical ideation and personality in a twin sample.

Method

A total of 534 adult twins from the population-based Italian Twin Register were assessed for MI using the MI Scale (MIS) and for personality with the temperament and character inventory (TCI). A Multivariate Cholesky model was applied with Mx statistical program.

Results

The best-fitting model showed that additive genetic and unshared environmental factors explain approximately the same proportion of variance in MI, whereas a less strong genetic influence on personality traits emerged. Relevant correlations between MI and specific personality traits (novelty seeking, cooperativeness, self-directedness, self-transcendence) were found, suggesting shared influences for MI and these traits. Both genetic and environmental factors explained these correlations, with genetic factors playing a predominant role.

Conclusions

Moderate-to-substantial genetic effects on MI and personality were found. Shared genetic and environmental effects underlie the phenotypic correlation between MI (psychosis-proneness) and personality traits, i.e. self-directedness (negative association) and self-transcendence (positive association), potentially representing predictive markers of psychosis liability related to schizotypy and personality.

Keywords

Schizotypy, GxE interaction, Personality, Self-directedness, Self-transcendence

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