

Towards new indicators of vulnerability to psychotic disorders

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The decision-making processes of healthy subjects with sub-clinical psychotic episodes are altered in a way that is similar to what happens in subjects with schizophrenia. This is the key result of a study conducted by the Neuroscience and Society Laboratory directed by Raffaella Rumiati of SISSA in association with the Zayed University of Dubai, recently published on *Scientific Reports*.

The research has examined, for the first time, [reward](#) mechanisms in [healthy people](#) who reported having had psychotic-like episodes, such as auditory hallucinations or lack of motivation, highlighting alterations and identifying possible indicators of vulnerability to psychosis.

Reduced motivation, emotional dysregulation and delusions are phenomena typically associated with psychotic disorders like schizophrenia. However, recent epidemiological studies have also reported the presence of these symptoms in the general population. Particularly, the term "psychotic-like experiences" derives from the hypothesis of the lack of a clear distinction between mental health and psychiatric [disorders](#). The psychotic-like or subclinical experiences, which affect around 8 percent of [young people](#), in most cases, reverse themselves, and only a small percentage manifests itself in true psychotic symptoms. What they imply on a behavioural level is still unclear.

The SISSA group, led by researcher Marilena Aiello, has investigated the decision-making processes, in particular the reward system, in 60 subjects with and without subclinical episodes, selected from a sample

of 334 participants, mainly [university students](#).

"This is one of the first studies conducted on healthy subjects with psychotic-like experiences," explained Damiano Terenzi, doctoral student in cognitive neurosciences and first author of the study. "The participants performed two types of tasks to study their reward system. It is well-known that schizophrenic patients prefer to obtain a little and immediately rather than wait or struggle to have more."

In the first task, the subject was asked to choose between one immediate but smaller reward (food or money) and a delayed larger one. In the second case, the effort required to obtain tasty food was increased during subsequent trials, and the subject was asked to decide whether to work or not to obtain the reward.

"In both cases, we observed alterations in the behaviour of people with more frequent subclinical episodes—in particular, in those with higher levels of negative symptoms like the lack of motivation—similarly to what happens in patients with a schizophrenic disorder," concludes Terenzi. "The study of these subjects opens new roads to understanding [psychotic disorders](#) and to identifying vulnerability indicators for their development."

More information: Damiano Terenzi et al, Temporal and Effort cost Decision-making in Healthy Individuals with Subclinical Psychotic Symptoms, *Scientific Reports* (2019). [DOI: 10.1038/s41598-018-38284-x](https://doi.org/10.1038/s41598-018-38284-x)

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