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What is metacognition?

Metacognition refers to 'thinking about thinking' and involves active control over the cognitive processes engaged in thinking and acquiring knowledge or learning. Metacognition also involves the notion of self, ranging from self as own body to self as own identity or 'agency'. A sense of body ownership occurs regardless of whether an action is generated by the self or others, whereas a sense of agency refers to the sense of being the one who initiates an action. Sense of agency is linked to the ability to maintain the distinction between the individual and the environment. Intrusive thoughts are generally defined as thoughts that are unwanted or unintended, and can be perceived as uncontrollable. It is argued that when intrusive thoughts are experienced, any inconsistency between metacognitive beliefs about one's ability to control thoughts and the experience of uncontrollable intrusive thoughts may lead to cognitive dissonance, a state of negative arousal. From this perspective, hallucination prone individuals are motivated to attribute their intrusive thoughts to an external source in the attempt to prevent cognitive dissonance from occurring.

What is the evidence for metacognition?

Compared to controls, moderate to high quality evidence finds large effects of more negative beliefs about thoughts (e.g. uncontrollability and dangerousness) and more cognitive confidence (confidence in one's memory and attentional capabilities) in people with psychotic disorders. There were medium-sized effects of more positive beliefs about worry being able to solve problems, and more cognitive self-consciousness (monitoring one's thought processes). Compared to people with emotional disorders, a small effect was found for more positive beliefs about worry in people with psychosis, with no differences in negative beliefs, cognitive confidence, or cognitive self-consciousness. There was also impaired self-awareness, particularly impaired sense of agency, in people with schizophrenia.

In people at risk of psychosis, high quality evidence finds large effects of more negative beliefs about thoughts and more cognitive confidence, a medium-sized effect of more cognitive self-consciousness, and a small effect of more positive beliefs about worry when compared to controls. When compared to people with a psychotic disorder, there were no differences on any metacognitive scale. Compared to help-seeking individuals who do not meet the 'at-risk for psychosis' criteria, moderate to high quality evidence finds medium-sized effects of more negative beliefs about thoughts and more cognitive confidence in people at risk of psychosis, with no differences in cognitive self-consciousness or positive beliefs about worry. In people experiencing hallucinations or those with hallucination proneness, moderate to high quality evidence finds small effects of more negative beliefs, cognitive confidence, and cognitive self-consciousness compared to people not experiencing hallucinations or hallucination proneness.

Moderate to high quality evidence finds a medium to large effect of poorer self-recognition and new item recognition in people with schizophrenia compared to controls. There is a medium effect of poorer self-recognition, but not new item recognition, in people with schizophrenia who experience auditory hallucinations compared to people with schizophrenia who do not experience auditory hallucinations.

For further information see the technical table



NeuRA

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NeuRA (Neuroscience Research Australia) is one of the largest independent medical and clinical research institutes in Australia and an international leader in neurological research.

Diseases of the brain and nervous system pose the greatest health, economic and social burden of any disease group because they are chronic, debilitating and have no known cures.

Medical research is the cornerstone of efforts to advance the health and wellbeing of families and the community. Our dedicated scientists are focussed on transforming their research into significant and practical benefits for all patients.

While we hope you find this information useful, it is always important to discuss any questions about schizophrenia or its treatment with your doctor or other health care provider.

HOW YOUR SUPPORT HELPS

We are able to make significant advances due to the generosity of countless people. Your donation allows us to continue to work towards transforming lives. For information on how you can support our research, phone **1300 888 019** or make a secure donation at neura.edu.au/donate/schizophrenia.

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