

EDITORIAL

Is metacognitive training for psychosis effective?



Cognitive biases in psychosis

Until the 1990s cognitive research in schizophrenia predominantly targeted ‘cold cognition’, that is *deficits* in neurocognitive faculties such as attention and memory impairment, which have been shown to compromise functional outcome [1]. In the past two decades the field has increasingly embraced cognitive *biases*, that is, distortions in the appraisal and processing of information. While cognitive biases are normal to a certain degree and in some cases may even promote well-being (e.g. unrealistic optimism, self-serving bias), escalation of some specific cognitive biases seem to play a role in the formation and maintenance of psychotic symptoms, particularly delusions. For example, a number of studies, recently summarized in two meta-analyses [2,3], demonstrated that patients with psychotic disorders and particularly those who experience delusions, jump to conclusions. Another literature indicates that patients are overconfident in their false judgements pertaining to memory, perception and social cognition [4,5]. Finally, a number of studies indicate that patients with psychosis are less open to counter-arguments, even for delusion-neutral scenarios [6].

Metacognitive training in psychosis (MCT)

Metacognitive training [7] aims to raise patients’ (meta-cognitive) insight and self-awareness of these cognitive distortions, with the goal of attenuating the positive symptoms of psychosis, particularly paranoid ideation. MCT is available in a group format (access at no cost in 33 languages through www.uke.de/mct) and as an individualized intervention (MCT+; access at no cost in 10 languages through www.uke.de/mct_plus). MCT may be described as a hybrid of cognitive behavioral

therapy (CBT), and psychoeducation. It adopts a ‘back door’ therapeutic approach by dealing with the (meta) cognitive processes before addressing the psychotic symptoms. Confronting patients immediately with the implausibility of their delusional ideas seems intuitive, but is often counter-productive as delusional ideas are interwoven with the biography and self-esteem of its holder and are not easily reversed through the presentation of counter-evidence. MCT aims to reduce overconfidence in false interpretation of reality through an element of surprise (‘aha’ experience), which improves insight and instills doubt on one’s beliefs. This process can counteract the tendency to make quick decisions, which may lead to inaccurate interpretations of reality [8]. Talking about cognitive biases is therefore a good starting point that may pave the way for confronting psychosis-specific contents.

There is now empirical evidence that the approach is both feasible and efficacious. Meta-analyses [9–10] indicate that the approach exerts a weak to moderate effect on positive symptoms generally, and delusions specifically, as well as jumping to conclusions. The most recent meta-analysis [10], which builds upon the largest body of empirical studies, demonstrates that positive symptoms ($g = -0.34$) and delusions ($g = -0.41$) are reduced at a small to moderate effect size, while for acceptance/subjective effectiveness a large effect is found ($g = -0.84$). The latter result is particularly noteworthy as treatment engagement by patients is often low, and nonadherence remains a serious challenge, for both psychopharmacological and nonpsychopharmacological interventions. The approach has been expanded to other psychological disorders and pilot trials on individuals with obsessive-compulsive disorder, depression and borderline have yielded positive results [11,12]. At this point, however, it is too early to say whether MCT is

efficient in non-psychotic disorders as well. There is also good evidence for efficacy from other bias correction programs [13,14], some of which have evolved from MCT, that the approach is both feasible and effective.

We need to be better!

While the effect size of MCT is comparable to that seen in CBT for psychosis [15], there is clearly room for improvement, particularly in view of a just moderate effect size available through antipsychotics [16]. In order to reach more meaningful change that will allow patients to lead fulfilling lives, existing treatment options, including MCT, must be improved.

A major challenge faced by all cognitive approaches are neuropsychological deficits, sedation by medication and poor motivation all of which limit comprehension and transfer to daily life. To address this, we are currently testing an Internet application that allows patients to carry out MCT exercises online, and to access the training materials, homework and worksheets at any time from their home computers. This may be particularly helpful for patients with memory deficits who cannot recall the contents of group or face-to-face treatment beyond the intervention period phase. Another serious general problem is that treatment stays are often very brief, and for many patients even one cycle of group MCT (8 modules administered within 4 weeks; another cycle is optional) would last longer than their treatment duration. One possible solution is to flesh out which modules are the most relevant and efficacious to devise a brief yet effective treatment option. However, work has only just begun addressing which MCT modules or procedures carry the treatment effect [17]. There is also currently mixed evidence as to whether MCT reduces susceptibility to cognitive biases, such as JTC, although methodological problems of the tasks (e.g. difficulties with comprehension) used to assess and measure these biases may be contributing to this [18]. There is preliminary evidence that the MCT works by ‘sowing the seeds of doubt’, that is, overconfidence is reduced when patients gain insight into the fallibility of everyday human cognition [7,14].

New developments

Studies suggest that many patients are ambivalent toward their psychotic symptoms [19] – the main target of MCT – and many consider emotional problems a more important treatment target than delusional beliefs [20]. In the past 12 months, we have therefore adapted the MCT to incorporate modules on self-esteem and anti-stigma instructing participants, for

example, how to communicate about their disorder and to deal with common prejudices. These also encompass a number of strategies, mainly adopted from CBT, on how to raise mood and self-esteem. As the MCT learns and grows, thereby widening its therapeutic range, it is important to conduct dismantling studies with more fine-grained assessment instruments, and shorter assessment intervals, to identify the main mechanism of change for MCT, and also for individual factors determining treatment effectiveness [21]. For example, we recommend that patients with very severe positive symptoms and disorganization not attend group training, as this may impair group dynamics; in these situations, MCT+ or individualized CBT are preferred. We need also to know if the training is effective in chronic patients and patients with low cognitive functioning. Finally, because MCT and MCT+ are open access and there is no formal curriculum, adherence to the manual in some trials is unknown (e.g. we heard that some trainers present and read all text on the slides rather than choosing and paraphrasing the most essential slides, so that sessions are sometimes much longer than the recommended time-frame of 45–60 min).

To conclude, many patients with schizophrenia display severe cognitive distortions. Bias correction programs such as MCT help to ameliorate such biases and reduce positive symptoms. However, more work is needed to elucidate the mechanisms through which the effect is exerted and ways to ensure lasting improvement.

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