



## Mind-body practices in schizophrenia – Opportunities and challenges

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Negative syndrome and cognitive [both neuropsychological and social] deficits remain a challenge in the treatment of schizophrenia. Clinicians have explored the role of mind-body practices as a solution (Sabe et al., 2019; Chien et al., 2019).

These include techniques such as yoga, tai chi, qigong and mindfulness. In our studies from India on effects of yoga in schizophrenia, we have demonstrated improvements in negative symptoms, socio-occupational dysfunction and social cognition (Duraiswamy et al., 2007; Behere et al., 2011; Varambally et al., 2012; Manjunath et al., 2013). A Cochrane review (Broderick et al., 2015) of studies (8 randomized controlled trials) on yoga in schizophrenia concluded that there was an advantage for yoga over standard care protocol for improvement in positive and negative symptoms and socio-occupational functioning. Another recent meta-analysis of studies on yoga and tai chi found improvement in negative symptoms (Vogel et al., 2019).

In this issue, two papers examine the role of meditation or mindfulness-based practices in schizophrenia. Sabe et al. (2019) report a systematic review and meta-analysis of meditation-based mind-body therapies for negative symptoms in schizophrenia. They include 10 studies on yoga, 2 on tai chi and 3 on mindfulness interventions and report beneficial effects of these practices on negative symptoms. On subgroup analysis, only yoga and mindfulness interventions had a significant effect on negative symptoms. The meta-analysis showed no significant effect of the interventions on severity of positive symptoms after exclusion of an

outlier. Authors conclude that there is a role for mind-body practices in the treatment of negative symptoms in schizophrenia and improvement may be secondary to the effect of these interventions on positive symptoms and general well-being. Chien et al. (2019) report a randomized controlled trial, in which mindfulness-based psychoeducation group program was found to be more effective than psychoeducation group or treatment as usual in improving functioning and psychotic symptoms over an 18 month period.

Some observations from these papers are noteworthy. 1) There was a beneficial effect of pure meditation/mindfulness-based practices on negative symptoms in schizophrenia; 2) There was no worsening of positive symptoms observed with these interventions. 3) Beneficial effects persisted for long: up to 18 months post intervention. However there are some caveats to these results. In none of the studies reviewed in Sabe et al. (2019), the yoga intervention included a component of meditation. It is not evident from the review whether improvement in negative symptoms is a secondary effect of these interventions on positive symptoms, as the authors did not demonstrate an improvement in positive symptoms with mind-body practices in the meta-analysis. The beneficial effects of yoga on negative symptoms could be due to a primary effect on negative symptoms, which may be mediated by its effect on modulating brain neuropeptides (oxytocin, neurotrophic factors) (Jayaram et al., 2013; Mehta et al., 2016). An often-expressed concern is that meditation practices might worsen psychosis (Lu and Pierre, 2007). In many of the reviewed studies the study participants were on stable dose of antipsychotics for 6–8 weeks. Hence it may be prudent to recommend meditation based practices in schizophrenia after positive symptoms have been controlled with antipsychotics.

Some important questions need to be answered before these mind-body practices can be widely recommended as an intervention in schizophrenia. 1) There is wide heterogeneity in structure and components of these practices limiting the comparability of findings across studies. Hence there is a need to standardize the various practices (Govindaraj et al., 2016). 2) Meditation or mindfulness may not always be included as part of traditional practices of yoga which includes physical asanas. Alternatively, the interventions should emphasize the need to be mindful of the Asana practices during the session. Typically, the practice of Yogasana demands complete mindfulness during the practice. The effects of

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physical practices alone or in combination with mindfulness are not well understood (Sathyanarayanan et al., 2019). 3) Given that schizophrenia is a lifelong illness, the persistence of benefits beyond the initial phases of therapy needs to be demonstrated. 4) These interventions require multiple sessions and regular practice which may be a challenge in the presence of negative symptoms. The barriers to acceptance by patients to continue to practice what they learned during the intervention period need to be examined in different settings (Baspure et al., 2012).

In summary, mind-body practices show promise in the management of schizophrenia. It can be a cost-effective technique which can be applied in groups in low resource settings. Further studies are necessary to address the above issues and build a stronger evidence base to recommend mind-body practices in schizophrenia (Keshavan et al., 2013).

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#### Declaration of competing interest

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