

Chapter 8.0
DISCUSSION

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8.1 SOCIAL COGNITION & MNA

This is one of the first studies exploring the role of yoga in social cognition. Previous studies have looked into the effect of yoga on Facial Emotion Recognition Deficit (FERD) in patients with schizophrenia. Previous studies (Jayaram et al., 2013) (R V Behere et al., 2011) have shown that yoga improves FERD in patients with schizophrenia. In this current study, social cognition is measured as a composite score which includes ToM (1st order and 2nd order), FERD, Social perception and Attribution Style (AS). Though we assessed AS, it was not included in the composite score calculation, as it gives information about the style of attribution but not of any numerical value that could be clubbed with other indices like ToM or social perception to arrive at a composite score for social cognition.

How does the overall social cognition improve with yoga still remains to be explored? Is it improving globally across all the domains of social cognition or is it a cascading effect of improvement in one/few domain(s) leading to improvement in other domains? We speculate that improvement in ToM could lead to improvement in other domains as well, as beliefs about self and others form the core for the social interactions and hence social cognition. Previous studies have also found ToM strongly correlating with the social functioning compared to other domains of social cognition and hence an important predictor for the same. Mirror Neuron Activity could also underpin the social cognition process as “imitation and being imitated” is one of the core processes of social interactions, though our study result does not support this speculation.

In our study, failure to detect the presence of MNA could be due to inadequate sample size. This is evident by the presence of MNA (overall MNA after merging both the intervention groups) in some of the conditions (contrast between static image observation and emotion embedded video observation and motor task performance - refer tables-7.8 & 7.9). This is one of the first studies using fNIRS to assess MNA the possibility of studying MNA with fNIRS and

hence its utility with yoga intervention needs to be tested with adequate sample size.

8.2 CLINICAL SYMPTOMS AND SOCIAL FUNCTIONING

Results of this study is consistent with previous studies (Duraishwamy et al., 2007) (Varambally et al., 2012) (Jayaram et al., 2013) (R V Behere et al., 2011) which shows that yoga is useful in improving negative symptoms (measured by SANS) more than the positive symptoms (measured by SAPS). Improvement in the social functioning along with the negative symptoms following yoga suggest that these may be related to each other as evidenced by prior studies. Although some of the previous studies have shown improvement in positive symptoms, our study results did not show statically significant improvement.

8.3 NEUROPSYCHOLOGICAL TESTS

There was no significant improvement in any of the neuropsychological tests scores (VFT, DSST, CT-B) following yoga intervention. Previous studies with yoga intervention were mainly on healthy population. One of the consistent findings in majority of prior studies were improvement in attention (Gothe & McAuley, 2015).

8.4 POSSIBLE MECHANISMS OF ACTION OF YOGA

Yoga could possibly work by both bottom-up and top-down approaches - promoting relaxation through asana and pranayama, and mindfulness through chanting and positive resolution respectively. This dual effect of Yoga might well fit in with the dual processing theory of Social Cognition (Evans, 2008) , with mindfulness (yoga mediated) promoting controlled (reflective) processing and relaxation modulating the reflexive (automatic) processing.

Enhancement in reflective processing and modulated reflexive processing could also impact the hypo frontality and aberrant salience in patients with schizophrenia leading to improvement in clinical symptoms and hence social functioning.

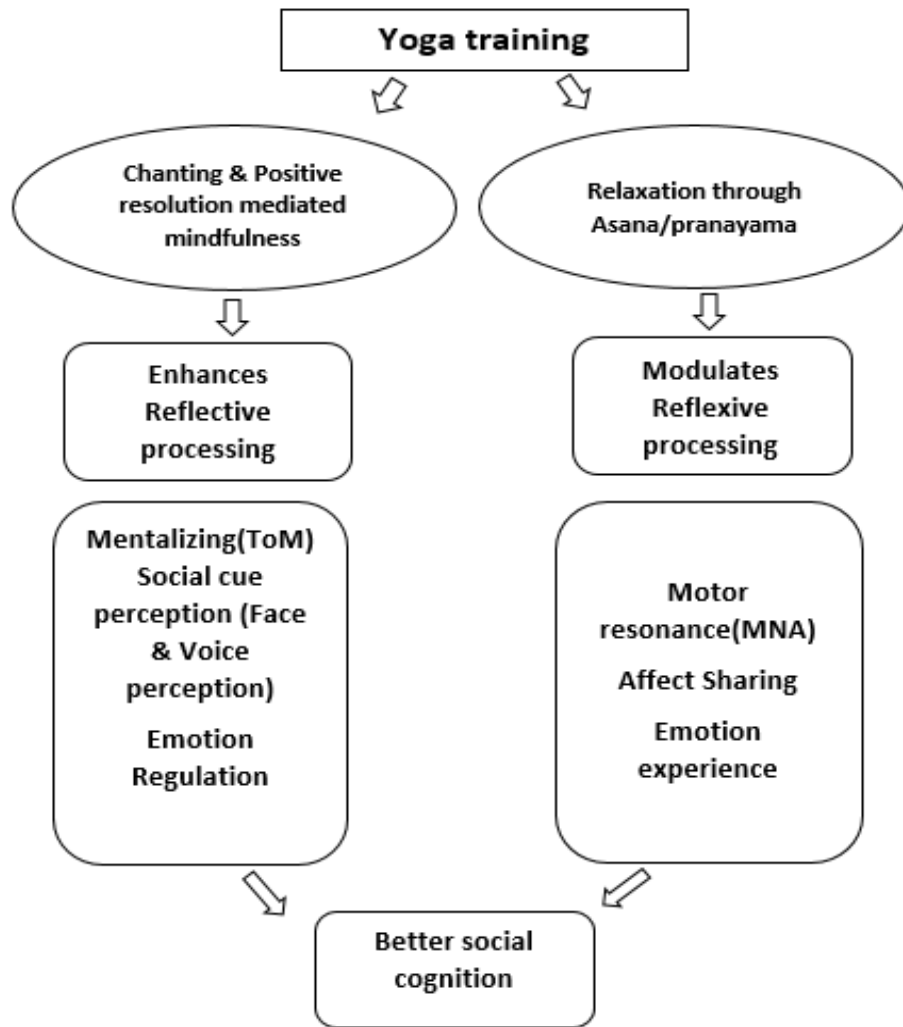


Figure-8.1 Possible mechanisms of action of yoga