

**Chapter 9.0**  
**APPRAISAL**

## **9.0 APPRAISAL**

### **9.1 SUMMARY**

In this thesis, we have attempted to demonstrate the utility of yoga in schizophrenia patients particularly on the social cognition aspect. Secondly we also explored the possibility of using fNIRS for studying MNA, perhaps with an inadequate sample size. Another novelty is adding a motor task for eliciting MNA which may not be possible with other modalities like fMRI, TMS, etc. which are commonly used for studying MNA.

Improvement in overall social cognition and clinical symptoms including social functioning following yoga training is promising, as add-on yoga therapy might be more feasible compared to other available social cognition interventions like affect recognition training, cognitive enhancement therapy which are highly resource intensive.

### **9.2 CONCLUSION**

One-month add-on yoga therapy improves social cognition, negative symptoms and social functioning. Add-on yoga therapy could also be considered along with available social cognition interventions, especially in Indian setup, as it is more culturally acceptable and feasible for its applications in clinical setup.

### **9.3 STRENGTHS OF THE STUDY**

- 1) One of the first study on yoga intervention for social cognition in patients with schizophrenia
- 2) Throws light on novel methods of studying some of the aspects of social cognition like MNA with fNIRS; using motor task for assessing MNA

To our knowledge this is the second study which has used fNIRS for studying MNA in patient population.

- 3) Randomized trial design

### **9.4 LIMITATIONS OF THE STUDY**

1) Samples were taken from both outpatient and inpatient department leading to heterogeneity and hence the inference may not be generalizable to any specific sample of patients.

2) In spite of having taken all precautions to avoid any structured psychosocial co-interventions, we cannot rule out remote chances of inpatients improving just because of their social interactions with other patients, staff & treating team.

3) Only short-term effect of add-on yoga therapy was studied. Long term effect of add-on yoga therapy is not established which might have greater real-life utility for patients.

4) All yoga group subjects were given yoga intervention in a well-designed yoga centre, which may not be available for all patients in real life, considering the varied social profiles of patients and hence the results may not be ecologically valid until otherwise proven.

5) Being a physical activity based trial, the yoga therapist and subjects could not be blinded.

## **9.5 APPLICATION OF THE STUDY RESULTS**

Considering the unavailability of effective pharmacotherapy and highly resource intensive psychosocial interventions for social cognitive deficits, add-on yoga therapy is an effective alternative for improving the clinical symptoms including social cognitive deficit in patients with schizophrenia.

Utility of add-on yoga therapy for cognitive deficit could possibly be extended to other psychiatric disorders like Autism and bipolar disorders in the future.

## **9.6 SUGGESTIONS FOR FUTURE WORK**

Future studies could focus on the following aspects

1) Long term effect of add-on yoga therapy on social cognition

2) Social interaction based active control group could be compared with yoga therapy group, to avoid the confounding related to social interactions leading to chance improvement in social cognition

3) MNA could be studied with larger sample size and MNA's relation to social cognition could be explored

4) Since logistics- especially the travel distance and the negative symptoms form the major hurdle for participating and sustaining regular yoga practices, community based yoga training could be explored for easy adherence to regular yoga practices.