Chapter 7
APPRAISAL OF THE THESIS
7.1 IMPLICATIONS OF THE STUDY

An examination of the autonomic and respiratory changes during and immediately after the test periods of the 5 types of sessions demonstrated some important findings.

1. All three nostril manipulating prāṇayāmas (sūryānuloma viloma, SAV; candrānuloma viloma, CAV; and nādiśuddhi NDS) resulted in a state of physiological rest along with mental alertness in contrast to breath awareness (BAW) and random thinking (CTL) sessions in which a few changes suggested that mental alertness/arousal alone occurred.

2. Following the SAV session both systolic and diastolic blood pressure values were increased while in contrast following CAV the systolic blood pressure decreased. These results are in line with concepts in ancient yoga texts, which have described SAV as an ‘activating practice’ and CAV as a ‘calming practice’. The therapeutic implications are that CAV may possibly be useful in the management of hypertension while SAV would best be avoided in hypertension prone persons and even more in those with hypertension. However further studies are required to substantiate these ideas.

3. The middle latency auditory evoked potentials were recorded in the yoga based uninostril breathing [SAV, CAV, NDS (alternate nostril breathing), BAW and random thinking (CTL)]. The MLAEP changes in amplitudes were isipilateral to the nostril through which breathing was practiced and decreases in latency were also ipsilateral. Alternate nostril breathing on the other hand appeared to bring about changes on the right side while changes in BAW and CTL sessions were non specific. These results suggest possible applications for uninostril yoga
breathing practices (SAV and CAV) in bringing about the facilitatory ipsilateral changes which are of therapeutic benefit in psychiatric conditions characterized by cerebral hemispheric imbalance, e.g., Obsessive Compulsive Disorder (OCD) (Shannahoff-Khalsa & Beckett, 1996).

7.2 LIMITATIONS OF THE PRESENT STUDY

In the present study 21 subjects were assessed while practicing three different prāṇayāmas and two control sessions. For each prāṇayāma practice there were 2 sessions. One in which autonomic and respiratory variables were recorded and the other during which evoked potentials were recorded. Hence though the sessions were repeated twice since the variables recorded were different it was not possible to test the reproducibility of results. Ideally each type of recording session should have been repeated for a minimum of three times but it is essential to note that such repetitions are often extremely difficult to conduct as each subject would have had to have been available for 30 recording sessions each.

The practice of prāṇayāmas does occasionally contribute to artifacts related to muscular activity which is specially a problem in sensitive electrophysiological recordings. As far as possible every attempt was made to avoid such artifact contamination of the records, and all records were examined for contamination. However, ideally this inherent difficulty in prāṇayāma recordings can only be overcome if one uses some other approach (for e.g., telemetric monitoring of the signals).
7.3 SUGGESTIONS FOR FUTURE WORK

1. The present study monitored the middle latency auditory evoked potentials which occur within 0-100 ms following the delivery of the stimulus. The neural generators of the components which occur within this range lie at the levels of the brain stem, the mesencephalon-diencephalon and the primary auditory cortex. In future studies it would also be interesting to examine additional cortical components e.g., those lying in the secondary auditory cortex and associated areas as reflected in the generators of long latency auditory evoked potentials i.e., the 100-500 ms range.

2. Since specific breathing practices with nostril manipulation are known to selectively influence the activity of either cerebral hemisphere, it would also be interesting to examine the effects of these breathing practices while performing hemisphere specific tasks and also recording the event related potentials.