

## **8.6 LIMITATION OF THE STUDY**

The absence of a control group complicates the interpretation of the intervention's effects. School-based interventions were disrupted by holidays, and students reported that the 50-minute time allocation was insufficient. Additionally, using handwritten records for interview responses introduces potential human error. The lack of follow-up in this study restricts the assessment to only half of the academic year. The research was self-funded, potentially limiting the scope of the study in terms of duration and the inclusion of robust objective measures to verify the impact on neuro-cognitive functions and physiological parameters of yoga. The investigation of direct, indirect, and causal effects was not feasible due to unmet assumptions. Relying on self-reported data may introduce biases, and the diverse cultural backgrounds and social parameters in a populous country like India introduce heterogeneity into the data, potentially biasing the analysis outcomes.

## **8.7 SUGGESTIONS FOR FUTURE STUDIES**

Future research should aim to extend interventions throughout the academic year to examine their sustained effects on adolescents' well-being and academic performance. Randomized controlled trials (RCTs) followed by longitudinal studies on the same participants can be conducted to monitor their growth and development over the schooling period. It is recommended to include the entire age range of adolescence (10-19 years) in future studies. Additionally, standardized protocols specific to academic requirements and challenges should be developed for different age groups. Furthermore, comparative analyses of different aspects of yoga practices, such as raja yoga and bhakti yoga for mental and emotional culturing, can reveal their distinct impacts on learning outcomes. Teacher training programs and implementation strategies of these interventions should be integrated into educational settings for adolescents.

As the world moves into the digital era, investigating digitized yoga-based learning methods to overcome geographical barriers is a vital area for further exploration. Researchers should include measures to evaluate the impact of yoga on various learning processes. Learning through yoga can focus on enhancing personality through self-directed learning. Additionally, peer-based learning can be highly effective by developing better interpersonal relationships, offering an efficient learning strategy that improves overall well-being and academic success. Exploring the effects of demographic and cultural factors such as age, gender, socio-economic status, and ethnicity on the receptivity of yoga can provide valuable insights into its effects on adolescent learning and academic development. Larger-scale studies mapping different regions of the country are recommended.

Emphasis should be placed on mind-body interventions to promote adolescents' overall development, addressing psycho-physiological, psycho-social, educational, and academic concerns. Researchers should integrate ancient knowledge with contemporary educational solutions to develop learning strategies suitable for a heterogeneous population. The primary aim should be to create a society free from the burden of psychological disorders through holistic solutions, which not only prepare the future generation for better employment in the global market but also cultivate individuals who embody the principles of a humane society. Furthermore, understanding the socially relevant issues contributing to a lack of interest in academics during early age and adolescence, and exploring learning strategies tailored to specific age groups and populations to reduce academic pressure and stress, are crucial. This holistic approach will ensure the development of individuals capable of thriving in a rapidly changing world.