

CHAPTER 5.0

5.0 METHODS

5.1 PARTICIPANTS

5.1.1 SAMPLE SIZE

The sample size for each group calculated using G*Power software was 38. Based on the previous study (Kushwah et al., 2015) the effect size was (0.84), by considering alpha (0.05), power (0.95). Hence, the final sample size was taken as 47.5 by calculating 25% (38+25%) attrition. For each group 50 subjects were recruited. Thus, total of 150 subjects were required for the three groups.

5.1.2 SELECTION AND SOURCE OF PARTICIPANTS

All subjects were recruited from Yogoda Satsanga Mahavidyalaya College in Ranchi, India.

5.1.3 INCLUSION CRITERIA FOR THE THREE GROUPS

- 1) Understanding of English language.
- 2) Age between 18-26 yrs.
- 3) Have no experience of practice of *yoga* earlier.

5.1.4 EXCLUSION CRITERIA FOR THE THREE GROUPS

- 1) Physical and mental disabilities.
- 2) Missing fingers (all 10 fingers required for Bio-Well recordings).
- 3) Have experience of practice of *yoga*.
- 4) Having any self-reported chronic diseases.

5.1.5 ETHICAL CONSIDERATION

The research protocol was approved by the Institutional Ethics Committee (RES/IEC-SVYASA/151/2019). Informed consent was signed by all the participants.

5.2 DESIGN OF THE STUDY

Following parallel-group design, each of the participants has an equal chance randomly to be allocated to one of three groups and participate accordingly. The random allocation sequence was

generated (using the website www.random.org) which was concealed in sealed envelopes to prevent selection bias, until the allocation. In the present study three groups were considered: (1) *Yama-niyama* (YN) group, wherein the elements of *yama-niyama* practices were included *yama-niyama* lectures, *Japa* writing from *Bhagavad Gītā*, reflect on daily *yama-niyama* themes, and counselling [however, no *āsana* or *prāṇāyāma*]; (2) *Yoga* (Y) group, wherein the theory of *yamās* and *niyamās* were presented for five minutes only, followed by *āsanās*, *prāṇāyāma* practices and counselling; and (3) Control (C) group who follow their regular classes in the college of equal duration.

Participants were randomly allocated to three groups of equal size. In the beginning, participants provided with their consent in the respective forms and demographic details. Then before the start of the respective intervention, the pre-data was collected from all the subjects: (i) filling up of *guṇa* questionnaire; (ii) using Bio-Well to measure the Human Energy Field (HEF), Health Status (HS), Energy Reserve (ER), the energy level of five major emotion-related organs (heart, lung, liver, spleen, kidney), entropy parameter, measures of disorderliness in the five major emotion-related organs, emotional pressure and the alignment of *cakra*. At the end of each time point of intervention, post-data was collected from all the three groups as mentioned above. During the follow-up period, both *yama-niyama* and *yoga* group followed one session per week for refreshing the practices and to motivate the participants to continue self-practice during the rest of the days. Control group followed their daily college routines. At the end of this period again the data was collected from the subjects of all the three groups.

5.3 VARIABLES STUDIED

5.3.1 PHYSICAL OUTCOME FACTOR BY BIO-WELL

- (i) Human Energy Field (HEF), a range of 40-70 Joules indicates normal energy.
- (ii) Health Status (HS), the optimal health condition is in the range of -0.6 to +1.
- (iii) Energy Reserve (ER), optimal level is from 20% to 60%.
- (iv) The energy level of five major emotion-related organs (heart, lung, liver, spleen, kidney), a range of 4–6 Joules is considered normal.
- (v) Entropy parameter measures disorderliness of energy in the five major emotional related organs, the normal range is from 1 to 2 (Deo et al., 2015).

Three assessments (baseline, after intervention and follow-up) were conducted at the same time

(8:30 am to 11:30 am) of the day, and in the same place with good ventilation. Participants were asked to report to the bioenergy data centre with an empty stomach as well as with empty bladder and bowel. Before the assessments, the Bio-Well equipment should be grounded properly and at the distance of more than 50cm from the computer system. Appropriate calibration of the Bio-Well was carried out before capture the EPI diagrams from the 10 fingers (Korotkov, 2014). The glass surface of the electrode was cleaned with soft tissue after each recording.

5.3.2 PSYCHOSPIRITUAL OUTCOME FACTORS USING BIO-WELL AND VPI QUESTIONNAIRE

(i) Emotional pressure values:

— 0-1: Complete inner peace. It may be attained by the states of deep meditation.

— 0-2: Very calm state and relaxed.

— 2-3: Normal calm state. A score of 2.5 or higher can indicate anxiety, but this is not permanent..

— 3-4: The inability to relax due to a constant state of anxiety.

— 4-10: The constant state of tension and stress state with different degree.

(ii) Alignment of 7 *cakrās* to the spinal system

(iii) Three *guṇās*: *sattva*, *rajas*, *tamas*

All above assessments were measured on 1st, and 90th day. One month follow-up after 90th day, and taking all the assessments on 120th day concluded the measurements.

5.4 INTERVENTIONS

5.4.1 FOR YAMA-NIYAMA GROUP

Participants in the YN intervention attended six sessions per week with each session conducted for 45 minutes per day during the three-month experiment. The intervention comprised of *yama-niyama* lectures, *japa* writing, introspection, counseling (Appendix-1). During one month follow-up, *yama-niyama* group met once a week for one hour to review and discuss the challenges they face in YN practice.

5.4.2 FOR YOGA GROUP

Participants in the *yoga* intervention attended for the same duration of time as YN group. The intervention included the components of *yama-niyama* lectures, introspection, *āsanā*, *prāṇāyāma*,

counseling (Appendix-2). During one month follow-up, they attended one session per week and for discussion.

5.4.3 FOR CONTROL GROUP

Participants were arranged to take a regular college course for 45 minutes during the intervention period for three months. In the follow-up, the participants followed their college routine.

5.5 DATA EXTRACTION

The raw data collected from bio-gram was exported from Bio-Well software into excel file for analysis.

5.6 DATA ANALYSIS

The researcher performed statistical analysis with the help of a professional statistician after the project was completed. The data were analysed by Statistical Package for Social Science (SPSS) Version 23 and R version 3.6.3. For the present study, Repeated Measures Analysis of Variance (RM-ANOVA) was used to compare within and between the two groups, with the pre-scores as a covariate. In the Intention-to-treat analysis, missing data were imputed in R software version 3.6.3 using the mice package. For all analysis, statistical significance was set as $p < 0.05$.