

CHAPTER 8

APPRAISAL

8. APPRAISAL

8.1 SUMMARY OF THE FINDINGS

ADOLESCENTS' OVER ALL 'ATTITUDE TOWARDS VIOLENCE' (ATV)

The Cronbach's alpha is .766, indicating good internal consistency among different items of scale.

Yoga group showed significant decrease in their ATV: [from 17.910 ± 2.936 to $10.820 \pm 3.063 = 7.090$ (39.59% mean change)] ($P < .001$).

PE group also showed significant decrease in their ATV: [from 21.840 ± 3.218 to $20.200 \pm 3.320 = 1.640$ (7.51% mean change)] ($P < .001$).

MALE ADOLESCENTS' ATTITUDE TOWARD VIOLENCE

Yoga group showed significant decrease in ATV: [from 19.970 ± 1.967 to $10.410 \pm 3.185 = 9.560$ (47.87% mean change)] ($P < .001$).

PE group showed non-significant decrease in their ATV: [from 22.910 ± 2.827 to $22.560 \pm 1.968 = 0.350$ (1.53% mean change)] ($P > .001$).

FEMALE ADOLESCENTS' ATTITUDE TOWARDS VIOLENCE

Yoga group showed significant decrease in their ATV: [15.730 ± 2.090 to $11.240 \pm 2.910 = 4.490$ (28.54% mean change)] ($P < .001$).

PE group showed significant decrease in ATV: [20.670 ± 3.247 to $17.590 \pm 2.436 = 3.080$ (14.90% mean change)] ($P < .001$).

ADOLESCENTS' OVERALL BELIEFS SUPPORTING AGGRESSION

The scale showed a Cronbach's alpha of .805, indicating good internal consistency among different items of the scale.

Yoga group showed significant decrease in their beliefs supporting aggression: $(3.190 \pm 0.417$ to $1.450 \pm 0.246 = 1.74$ (54.55% mean change) ($P < .001$).

PE group showed significant increase in their beliefs supporting aggression: $(3.080 \pm 0.410$ to $3.300 \pm 0.341 = -.22$ (-7.14% mean change) ($P < .001$).

MALE ADOLESCENTS' BELIEFS SUPPORTING AGGRESSION

Yoga group showed significant decrease in their beliefs about aggression: $(3.290 \pm 0.350$ to $1.510 \pm 0.280 = 1.78$ (54.10% mean change) ($P < .001$).

PE group showed non-significant increase in their beliefs about aggression: $(3.230 \pm 0.361$ to $3.360 \pm 0.335 = -.13$ (-4.02% mean change) ($P > .001$).

FEMALE ADOLESCENTS' BELIEFS SUPPORTING AGGRESSION

Yoga group showed significant decrease in their beliefs about aggression: $(3.090 \pm 0.461$ to $1.390 \pm 0.192 = 1.70$ (55.02% mean change) ($P < .001$).

PE group showed significant increase in their beliefs about aggression: $(2.920 \pm .402$ to $3.230 \pm .340 = -.32$ (-10.61% mean change) ($P < .002$).

ADOLESCENTS' OVERALL BELIEFS ABOUT ALTERNATIVES TO AGGRESSION:

Cronbach alpha is .657 in this scale, showing good internal consistency among different items of the scale.

Yoga group showed significant increase in their beliefs about alternatives to aggression: ($3.110 \pm .590$ from $1.810 \pm .394 = 1.30$ (71.82% Mean change) ($P < .001$).

PE group showed significant decrease in their beliefs about alternatives to aggression: ($1.710 \pm .330$ from $1.910 \pm .395 = -.20$ (-10.47% mean change) ($P < .001$).

MALE ADOLESCENTS' BELIEFS ABOUT ALTERNATIVES TO AGGRESSION

Yoga group males showed significant increase in their beliefs about alternatives to aggression: ($2.570 \pm .239$ from $1.720 \pm .310 = .85$ (49.42% mean change) ($P < .001$). PE group males showed non-significant decrease in their beliefs about alternatives to aggression: ($1.650 \pm .311$ from $1.750 \pm .329 = -.10$ (-5.71% mean change) ($P > .001$).

FEMALE ADOLESCENTS' BELIEFS ABOUT ALTERNATIVES TO AGGRESSION

Yoga group showed significant increase in their beliefs about alternatives to aggression: ($3.680 \pm .159$ from $1.900 \pm .451 = 1.78$ (93.68 % mean change) ($P < .001$).

PE group showed a significant decrease in their beliefs about alternatives to aggression: (1.780 ± 0.340 from $2.080 \pm 0.396 = -.30$ (-14.42% mean change) ($P < .005$).

Thus, it is demonstrated that yoga practice for four weeks would enable the adolescents to look for more and more alternatives to aggression in place of aggressive strategies and this change could be seen in both genders.

8.2 CONCLUSIONS

Present study has clearly established the potential of yoga and supports the view that as against physical exercises, 4 weeks' yoga practice significantly decreases adolescents' attitude towards violence, beliefs favoring aggression; and significantly increases beliefs favoring non-violent strategies which is comparable with many of the previous studies where yoga intervention was studied to correct different aspects of aggression and violence like verbal aggression, covert aggression, *Gunās* as predictors of aggressive behavior, cognitive functions, anxiety aggression (Deshpande et al., 2008b; Reddy, 2015; Krishna Rao, 2000; Ramadoss & Bose, 2010; Vengatesh, 2014). Though longitudinal correlations to predict the violent attitudes, beliefs supporting aggression levels, by employing multiple independent variables are not included, the present study could be a strong support for the view that long duration yoga practice with good sample size would bring about positive changes in the aggression and violent levels of adolescents. Yoga brings about relaxed body and mind; and mind is slowed and becomes more receptive to the happenings around (Govindaraj et al., 2016). Mind becomes more amenable to the happenings instead of being averse. The person understands things better and learns to respond constructively in place of being destructive (Nagarathna & Nagendra, 2003). As yoga is the art of slowing down the *sādhaka* (practitioner) could think well and realizes that nothing could be resolved by being aggressive

and violent. By being calm, cool, problem solving could be more effective and the adolescent learns to use non-aggressive or non-violent strategies as alternatives to aggression and violence. The study also provides a good research support for therapists and psychiatrists to apply yoga as an alternative therapy (Naveen et al., 2013) to address adolescents' violent attitude/higher beliefs supporting aggression. It is to place on record that longitudinal correlations between different variables to predict the aggression levels, by employing multiple independent variables are not included in the present study. Despite this limitation, the results of the present research could be a strong support for the view that long duration yoga practice with good sample size would bring about a decrease in the aggression/violent levels of adolescents; and increase the use of non-aggressive strategies.

The results in Table-4 show that the effect of yoga in influencing adolescents' attitude towards violence is most prominent and pronounced for the age group of 12 – 14 years. Adolescents are likely to be less influenced by yoga as they grow up. This can be partly attributed to the effect of formative years of the adolescents. The results, though based on four week-yoga intervention, point to the usefulness of teaching yoga in formative years. Equipped with this knowledge and yoga practice, they may be in a better position to handle the stress that they are likely to face as they grow up.

Some research studies say that ATV is inversely related to age. The age brings about maturity and sensitive to the pains of others; and owing to this fundamental change in their attitude, adolescents increasingly become aware of their surroundings, with an increase in age (Huesmann & Guerra, 1997). Accordingly it was predicted in the present study that the violent attitude of adolescents would decrease as they get older. The pre-intervention mean scores of ATV (age-wise) is 12 years (22.62), 13 years (21.45), 14 years (19.81), 15 years (18.67), showing a gradual tapering as the age increases and thus the age of the adolescent is

a good predictor of ATV. Even in the case of post-intervention, this correlate with age mostly remains and ATV (age-wise) is 12 years (16.69), 13 years (16.68), 14 years (14.76), 15 years (15.33).

Belief is an outcome of one's belief system which is deep rooted in one's personality (Swami Vivekananda, 1988). In the present study, it is clearly demonstrated that even this kind of deep-rooted personality trait or higher beliefs supporting aggression among adolescents can be reduced through yoga intervention.

The sample size in the present study has been large enough to provide a certain amount of statistical stability to the results (Amir D Aczel, 1989).

Further, reporting bias on the part of the respondent (Williams, Cote, & Buckley, 1989) for fear of being branded one way or the other is another issue that requires greater attention. Increasing the sample size, maintaining and ensuring privacy and protection of data, building anonymity in to the data collection method are some of the known methods to minimize these, and the present study has taken care of these issues. However, this can be further strengthened by gathering data on parent rating and teachers rating.

The authors suggest that the current priority is to identify the specific domains of crimes, aggression, and violence among adolescents that are considered to be public health hazards. Implement the evidence-based preventive interventions to restrain the adolescent aggression/violence to reduce the achievement gaps (Basch, 2011).

8.3 IMPLICATIONS OF THE STUDY

The study results point to certain implications and useful directions regarding use of yoga in addressing aggression and violence. In an era characterized by increased competitive pressures from schooling right up to professional growth, individuals are expected to face more stress which can lead to aggression and violent behaviors. As discussed earlier, the introduction of yoga at the formative years will provide a significant helping hand in addressing the problem. Schooling system needs to recognize the importance of the introduction of yoga and provide a structured mechanism to incorporate it into the curricula. Yoga lessons could be introduced at the third grade. A 5 to 6-year curricula with relevant inputs from yoga could be designed and progressively introduced.

8.4 APPLICATIONS OF THE STUDY

Addressing aggression or violent attitude through yoga as proposed in this study is alternative to drug therapy. Drug therapy is normally associated with high costs and is known to produce various side effects. The present study strengthens the view that yoga (a non-invasive method) could be a safe and cost-effective alternative for drug therapy to address violent attitudes of adolescents without side effects. Another important applicability of the study is that irrespective of sex, yoga intervention can bring about upbeat changes in the adolescents' ATV, more than what the PE can do. Hence, the study outcome is consistent with the Indian conventional yoga scriptures which did not make any gender discrimination for yoga practice.

The practice of yoga not only helps in addressing aggression and violent attitude but helps an individual develop a more balanced view of life, empathy towards multiple actors and situations, an overall and a holistic perspective of life and a sense of preparedness to face

difficulties in life. This results in developing healthy individuals in the society. The indirect effects of such a development include greater work productivity for the organizations these individuals are associated with in the future.

8.5 STRENGTH OF THE STUDY

Getting larger sample sizes is preferable to have good estimates of the population (Amir D Aczel, 1989). Practicing yoga for once or twice a week may not yield considerable results (Haden et al., 2014; Streeter et al., 2010). To have better results, it is desirable to practice yoga for longer period say Deshpande et al (2008). The present study has good sample size, and yoga intervention is for four weeks, which is considered intense, thus benefits of yoga are most evident.

The study is based on 'self-reported' attitude towards violence and beliefs about aggression and alternatives. One of the important strengths is that the study could gather details that only the subject knows and none else. In the case of 'peer reported' studies, the role of bias or prejudice cannot be ruled out; the peer might be either unfair or overly fair.

In these days where Yoga is becoming very popular, the outcome of this study decisively encourages the introduction of yoga to adolescents for addressing their aggression in their formative years. The results of the present study could encourage policy makers, who are controlling the education system, to introduce yoga at all levels of schools and provide intense teaching to adolescents by standardizing the yoga curricula. Yoga, owing to its superior benefits, could be an added curricular activity to children in moulding their personality in their formative years that can have an impact on other phases of life also.

Normally, treatment for physical or psychological problems is through medicines or invasive techniques. But here, in the present study, it has been shown decisively that through a non-invasive and drugless method like yoga, the adolescents' attitude toward violence, their beliefs about aggression can be decreased, and their beliefs about alternatives to aggression can be increased. Further, adverse effects of yoga, if practiced under trained supervision, are very minimal (Govindaraj et al., 2016), as the technique is non-invasive in nature.

8.6 LIMITATIONS OF THE STUDY

One important assumption of the present study is that the change in adolescent's ATV, their beliefs about aggression and alternatives is totally attributable to the intervention of either yoga or physical exercises. In this age of mass media, the chances that the subjects of physical exercise group may also have some exposure to yoga (through TV programs, news papers, and periodicals) during study period cannot be ruled out. Similarly, yoga group subjects too might have some exposure to physical exercises through these mass media during the study period cannot be ruled out. Hence, the impact on adolescents' ATV, their beliefs about aggression and alternatives cannot be only from one intervention (either yoga or PE).

Some of the studies say belief about aggression will have its strong influence on two things namely, aggression and hostile expectations (Zhen, Xie, Zhang, Wang, & Li, 2011). Studies also say that positive correlation exists between low levels of empathy and a strong belief in acceptability of aggression (Anderson et al., 2010). The level of empathy is a function of the level of sensitivity to others' sufferings (Bartholow, Bushman, & Sestir, 2006). Further, verbal skill could be a good predictor for beliefs about aggression (Kikas, Peets, Tropp, & Hinn, 2009). This kind of pathway / relational / trajectory study has not been employed in the

present study. The objective of the present study was to find out the effect of yoga on adolescents' attitude towards violence and beliefs about aggression and alternatives, in the light of growing popularity of yoga; and yoga as one of the powerful non-invasive, drugless alternative therapies for aggression. More research is needed where correlates of aggression like stress, anxiety, literacy, financial condition, frustration, and hostile expectations, may be employed as variables with yoga intervention.

Further, the study is solely dependent on 'self-reported' beliefs about aggression and alternatives. Though this is mentioned as one of the strengths of the study, looking from another angle, this might prove to be a limitation too. As aggression is socially un-acceptable in India, once an adolescent is branded as aggressive or violent, there is always a fear of rejection by fellow school mates, the teachers, and the society. Thus, in such 'self-reports,' the adolescents may conceal their true beliefs. Hence, self-reports alone may not be sufficient to judge the adolescents' ATV, beliefs about aggression and alternatives.

The present study has used 'Likert' type scales. Use of 'Likert' scale for soliciting perceptual responses from the participants is traditionally found to have certain limitations regarding translating the respondents' specific perception to a point on the scale. The respondent has to translate his perception about a given situation into mathematical value point mentioned in scale. This is always confusing, and the respondent's response might not be captured well. This limitation in the present study could be trounced by conducting additional studies in future.

The study does not consider different types of violence, namely, physical, verbal and covert. Beliefs about different kinds of aggression, attitude towards different kinds of violence need

not be the same (Crick & Dodge, 1994). Hence, there is a need to consider these limitations in future studies.

Further, the present study does not consider certain important variables like income levels of the parents, racial/ethnic differences, peer affiliations, and neighborhood which are considered to be the good predictors of violent attitude, beliefs about aggression and alternatives (GovindarajaSetty et al., 2016).

Indian society is highly influenced by ‘conventional *varṇa* system’ (broad grouping of society according to one’s duties into four *varṇas* namely, *brāhmaṇa*, *kṣatriya*, *vaiśya* and *śūdra*) (Bamshad et al., 2001). The people in this *varṇa* system have different roles to play in society, and they work together in the larger interest of social harmony (Navarthna, 2014). This *varṇa* system is so strongly embedded in the society that the very life styles are inherently different and have a strong influence on people (and their children) (Swami Vivekananda, 1988). Employing independent variables like *varṇas* to find out if one’s *varṇa* in any way influences attitude towards violence, or their beliefs supporting aggression and alternatives could be another possibility in studies.

Further, urban and rural life styles have vast differences (Samanta, Mukherjee, Ghosh, & Dasgupta, 2012) and studies may also include these variables for a better understanding of the impact of yoga on adolescents’ attitude towards violence, their beliefs supporting aggression and alternatives.

Despite these limitations, the present study opens up possibilities for the future research.

8.7 SUGGESTIONS FOR FUTURE STUDIES

One important limitation of the study is that of ‘self-reports.’ Adolescents may conceal their true beliefs as aggression/violence is socially un-acceptable. Once an adolescent is branded ‘hostile,’ there is always a fear of rejection by society. In future research, this can be trounced by additionally using peer-reports, parent reports, and teacher reports also, and due weight-age may be given to these reports, so that outcomes will be more dependable and powerful.

The present study does not include some of the important variables like peer affiliations, neighborhood, income levels of the parents and racial/ethnic differences, which are considered to be the good predictors of violent attitude. Hence, future studies may address this issue (Govindaraja Setty et al., 2016).

Belief about aggression will have a strong influence on aggression/hostility expectations. A positive correlation exists between low empathy and strong belief in aggression acceptability (Anderson et al., 2010). Empathy is a function of sensitivity to others’ pain or sufferings (Bartholow et al., 2006). Verbal skills may significantly predict beliefs about aggression and alternatives (Kikas et al., 2009). This kind of trajectory / pathway study was not employed in present research. Future studies may consider these kinds of pathway analyses to increase the utility of study results.