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## **Effect of Yoga on Human Aggression and Violent Behaviour-**

### **A Review of the Indian Yoga Scriptures and Scientific Studies**

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# **Effect of Yoga on Human Aggression and Violent Behaviour – A Review of the Indian Yoga Scriptures and Scientific Studies**

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## **Abstract**

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Among the deviant human behaviors, aggression appears to be the most prevalent and disturbing one, affecting one and all. Uncontrolled aggression/violent behavior could cause a significant toll, equally affecting both involved and the non-involved. This delinquent human behavior has been well addressed in Indian yogic scriptures. It provides a theoretical framework to understand the causes, ill-effects, need for peace, harmony, and ways to correct the aggression behavior. It is also claimed that yoga is a way for inner bliss and external coherence; and with this time-tested technique, it is possible to bring about a sense of inner peace and emotional stability, thus having potential to correct aggressive behaviors. This review paper also brings out the studies made to find out effect of yoga on human aggression/violent behavior.

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**Keywords:** Yoga, aggression, violence, violent behaviour



# **El Efecto del Yoga en la Agresividad Humana y en el Comportamiento Violento – Una Revisión de las Escrituras Indias de Yoga y Estudios Científicos**

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## **Resumen**

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Entre las conductas humanas desviadas, la agresión aparece como una de las más frecuentes y alarmantes, afectando a todas las personas sin excepción. La conducta agresiva/violenta incontrolada puede causar graves consecuencias, afectando tanto a las personas directamente implicadas como a las no implicadas. Este comportamiento humano delictivo ha sido abordado con profundidad en las escrituras indias yóguicas. Ello aporta un marco teórico para entender las causas, efectos nocivos, la necesidad de paz, armonía y las formas para corregir las conductas violentas. También se afirma que el yoga es una forma de alcanzar la paz interior y la coherencia exterior; y con esta técnica probada en el tiempo es posible lograr un sentimiento de paz interna y de estabilidad emocional, por lo que tiene potencial para corregir conductas agresivas. Esta revisión bibliográfica pone de relieve los estudios llevados a cabo para identificar los efectos del yoga en las conductas humanas agresivas/violentas.

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**Keywords:** Yoga, agresión, violencia, comportamiento violento



**A** Among the deviant human behaviors, aggression and violence appear to be the most prevalent and highly disturbing, affecting one and all in the society, hence considered a serious global health problem (WHO, 2014). Some of the studies say that this aberrant behavior normally surfacing in childhood becomes habitual and continues at all age points of an individual and that in childhood it might lead to rejection from family as well from fellow children, relational tribulations leading to isolation during adolescence and criminal, illegal or unlawful behavior in adulthood (Huesmann & Guerra, 1997) and the whole society looks down at such an individual. Further, it could affect both the involved and the non-involved; and unchecked aggression and violence exact a significant toll on human societies.

Though normally men score slightly higher on aggression, this deviant attitude is not gender-sensitive. Significant correlates of interpersonal violence were found in younger age. Intensity of aggression is directly attributable to one's amount of frustration. Though aggressive behaviors evolved as adaptations to deal with competition, they can have destructive consequences. Family members have been the object of violence in more than 50% of cases (Kumar, Akhtar, Roy & Baruah, 1999). Worldwide, mass media reports, a number of violent acts affecting one and all, that are neither country specific (Miron, 2001) nor religion specific (Cobban, 2005) and world over findings regarding violence-related behaviors are remarkably similar. The economic cost associated with violence-related injuries, disabilities, and premature deaths is estimated to be in billions of dollars. The gravity of the problem could be understood from the fact that 49 World Health Assembly Geneva, declared violence as leading global public health problem and urged members to assess the problem of violence in their territories; and convey details to WHA, besides clearly defining their approach to deal with it. Further, WHA requested the Director-General for public health to address the problem of violence, promote research on violence on priority and document them for the benefit of member nations.

“Aggression” and “violence” are generic terms. Oxford dictionary defines “aggression” as “feelings of anger or antipathy, readiness to attack or confront, resulting in hostile or violent behavior”. WHO defines “Violence” as “intentional use of physical force or power, threatened or actual, against

oneself, another person, or against a group or community or section of people, which either results or has a high likelihood of resulting in injury, death, psychological harm, mal-development or deprivation”. “Violent behaviors” are latent perception variables towards violence, which are guided by one’s own value systems.

### **Aggression and Violence: Indian Scriptural Perspective**

Aggression and violence have been well addressed in Indian scriptures (*Vedas, Upanishads, Bhagavad Gītā, Brahma Sutras, Yoga Sutras, and Bhakti (Devotion) Sutras*), which are also considered as conventional yoga texts. This traditional literature provides a theoretical framework to understand the aggression and violence in conventional background. In every Indian scripture, there is invariably a mention on aggression and violence, ill effects, ways to avoid, and need for harmony and coherence. These include teachings under ‘The doctrine of *ahimsa*’ (Rajapakse, 1988; Phillips, 2010). ‘*Ahimsa*’ means and includes avoiding any harm (physical, mental or emotional), to remain passive in any situation, without the desire to harm anyone (Muktibodhananda, 2004). *Himsa* is brought out by three ways namely, ‘violence done’, ‘violence got done’ and ‘violence sanctioned’ (Adidevananda, 1998), wherein all the three bring endless agony. But when a person is firmly established in *ahimsa*, in his/her presence, even cruel persons renounce violence (Adidevananda, 1998). Indian yogic scriptures recommend that personality of an individual gets nourished by a mix of both ‘relaxing’ and ‘stimulating’ practices by attaining a state of mental equipoise (Telles & Reddy, 2000).

### **Prevalence of Aggression and Violent Behavior: Indian Scriptural Perspective**

Indian scriptures answer the question, ‘does aggressive and violent behavior indeed exist in us? If yes, in whom and in what ways?’ ‘Pretentiousness, arrogance, overweening pride, wrath, rudeness, aggression, scant regard for pain of others, insensitiveness to spiritual values are prevalent in those born to demoniac (*Asuri*) heritage’; whereas, non-violence, truthfulness, freedom

from anger renunciation, tranquility, aversion to slander, compassion to living beings, sensitivity to the pain of others, empathy, freedom from sensuality, gentleness, modesty, steadfastness, are the qualities present in those born to divine (*Daivi*) inheritance’ (*Bhagavad Gītā* 16.2.4) (Tapasyānanda, 2003).

### **Causes for Aggression and Violence, and Need to Address: Indian Scriptural Perspective**

Indian scriptures clearly establish the causes for aggressive and violent behavior and assert that we have propensity to be violent. Causes could range from ‘sense objectivity, greed and illusion. *Bhagavad Gītā* (2.62) says, if one dwells longingly on sense objects, inclination towards them is generated; inclination develops into desire; desire begets anger, and finally culminates in aggression. *Bhāgavatam* (4.8.3) says, hypocrisy and illusion beget greed and deceitfulness, they, in turn, beget aggression and violence. Insatiable lust, uncontrolled anger, born out of ‘*rajas*’ prompt men to engage in violence (*Bhagavad Gītā* 3.37). ‘*Rajas*’ is passion-based leading to craving for objective pleasures; and clinging to objects already possessed by an individual. *Tamas* is ignorance-born and produces delusion leading to negligence, indolence, scant regard for pain of others (*Bhagavad Gītā* 14.7-8). The children (derivatives) of aggression and violence are ‘hostility’ and ‘harsh abusive words’ (verbal aggression) (Velanakar, 2013).

The gradual degradation of aggressive and violent personalities is also brought out by Indian yoga scriptures. Aggression generates delusion, delusion results in loss of memory, loss of memory brings about destruction of discriminative intelligence, and loss of discriminative intelligence spells ruin to a man (*Bhagavad Gītā* 2.63).

*Bhagavad Gītā* (16.21) establishes in a pristine way that lust, aggression, and greed lead to destruction of man’s spiritual nature. They form the gateway to hell; hence surely be abandoned (Tapasyānanda, 2003). *Patañjali Yoga sūtra* (2.30) says, *ahimsā* (non-violence), *satya* (truthfulness), *asteya* (non-stealing), *brahmacharya* (sexual self-restraint), *aparigraha* (non-obsessively possessive) are five *yamas* (moral universal commandments for self-control) (Prabhavananda, 2004). *Patañjali Yoga*

*Sūtra* (2.35) says, when a yogi is resolutely committed to non-violence, there is no hostility, wherever he is present (Prabhavananda, 2004). *Manusmṛiti* (5.43) says a *Brahmin* of virtuous disposition, whether dwells in (own) house, with a teacher or in the forest, must never, in times of distress, cause injury to any creature, which is not sanctioned by *Vedas*. *Bhāgavatam* (4.18.14) says, you will get the divine feet of *Bhagavān Nṛsimha* (one of the ten incarnations of Lord *Vishnu*), only on your abandonment of desire, melancholy, aggression, pride, apprehension, and grief which are the causes for vicious cycle of birth and death (Velanakar, 2013).

### Addressing Aggression and Violent Behavior: Yoga Way

Practical lessons of Indian yogic scriptures could provide broad framework and specific ways to fight against this delinquent behavior and answer the question, can we as human beings, bring about a paradigm shift in our personality by avoiding all these aggression and violent behavior. One of the eighteen Indian mythologies, *Bhāgavatam* (1.18.22) says one who is in divine love with the Supreme Lord can make non-violence and peace one's *dharma* and strive for the ultimate realization through *dhyāna* (Velanakar, 2013). The word 'yoga' implies non-duality, oneness with the Supreme Soul; and the very notional duality causes fear, anger, lust and therefore reaching oneness can address this delinquent behavior (Adidevananda, 1998). Violence is attributable to ignorance caused by pretentiousness, impatience, lack of straight-forwardness, abhorrence, lack of self-control, lack of devotion and scant regard for cleanliness (*Bhagavad Gītā* 13.7-11). *Bhāgavatam* (6.4.14) further says, a person can transcend '*Triguṇas*' (personality traits) by appeasing and controlling the teeming aggression by steady, indrawn, discriminating mind (Velanakar, 2013). Withdrawal of mind is nothing but '*prathyāhāra*' mentioned in *ashtanga* yoga texts.

According to yogic scriptures, early seers (spiritual masters or yogis or prophets) of India devised and used yoga as a means to explore the external and internal realms; and to attain ultimate knowledge described in sacred Indian texts. These great masters or yogis prescribed yoga as a way of life to be in tune with the highest reality; and the importance is on individualized or one's own confirmation and not merely on religious dogmas or doctrines.



They preached that yoga is both a way for internal bliss and external coherence. "Yoga" is derived from a Sanskrit root word 'Yuj' (join), hence "yoga" means and includes, joining of the body, mind and the 'Self'(soul) (Nagendra, 2000).

Addressing violent and aggressive behavior through yoga has been suggested by many researchers on the ground that it is very effective and be documented to promote research on violence on the lines suggested by *World Health Assembly, Geneva* for the benefit of member States. Yoga is an ancient science, originating in India, which includes diverse practices like physical postures (*asana*), regulated breathing (*pranayama*), meditation and lectures on philosophical aspects of yoga. The ultimate aim of yoga is to remain unperturbed in success or failure and perfection of the personality of its practitioner to remain equipoise in all conditions (*Bhagavad Gītā* 2.48). The yoga texts suggest that the solution lies in developing health and personality of the individuals brought out by a mix of both 'relaxing' and 'stimulating' practices which help in reaching a state of mental equipoise (Telles, Reddy, & Nagendra, 2000) and supports the view that combination of yoga postures interspersed with relaxation reduces arousal more than mere relaxation (Sarang & Telles, 2006).

*Asanas*, which are physical movements, may give exercises to various organs and systems and provide them an avenue to deal with character, attitudes and tensions; can bring about healthy changes in several psychopathological conditions (Krishna Rao, 2000). When yoga induced non-violence in speech, thought and action is established, one's aggressive nature is relinquished; others abandon hostility in such a yogi's presence (Iyengar, 1993). Swami Vivekananda says, 'the test of *ahimsa* is absence of jealousy' (Prabhavananda, 2004). Generosity, acceptance, patience, freedom from self-importance, unpretending, *ahimsa* (non-violence), self-control and straight-forwardness are the divine qualities one can nourish through yoga (*Bhagavad Gītā* 13.7-11).

Yoga is an ancient science and an art and a way of life, aimed at harmonious system of developing the body, mind and spirit. The Indian scriptures claim that yoga, with its powerful, time-tested techniques, can bring about a sense of inner peace, which can culminate in emotional stability, harmony and clarity of mind (Nagendra, 2000). *Bhagavad Gītā*

defines yoga as ‘*samatvam yoga ucyate*’, - ‘always being in a state of unperturbed evenness’. *Patañjali*, who is quoted widely in yoga researches, defines yoga as ‘*Yogahcittavrittinirodah*’, i.e., ‘Yoga is the cessation of movements in consciousness’ which can lead to complete mastery over mind. *Sage Vasistha*, (*‘Yoga Vasistha’*) defines yoga as a technique to slow down or calm down the mind through deep internal awareness (Nagarathna & Nagendra, 2003).

Thus, in its attempts to achieve these results, yoga offers varied techniques like *asanas* (bodily postures), *pranayama* (regulated breathing), and *dhyāna* (meditation) coupled with *swadhyāya* (sermons of philosophical aspects of yoga). Violent/aggressive individuals normally do not respond or react to oral methods only; instead, they are to be addressed through psychodynamic psychotherapies like yoga, martial arts, out-door games (Twemlow, Sacco, & Fonagy, 2008).

The way yoga leads to reduction of aggression is understandable: anger, aggression and violence are said to be unrestrained speed in one’s mind (Nagarathna & Nagendra, 2003) whereas, yoga is the art of slowing down the mind, so that one has time to think and act. This modification is owing to increased clarity of thoughts, calmness, serenity, and control over emotions, carving out a happy living. The norms prescribed by Indian scriptures for yogic life are characterized by peace, tranquility, harmony, love, happiness, and efficiency, driven by discrimination, right thinking, right understanding, and calculated actions.

### **Causes as per Research Studies; Aggression Theories**

Research says there is no single cause for human aggression and violence. It ranges from factors like racism (Rogers & Prentice-Dunn, 1981), religious intolerance (Corrigan & Neal, 2010), sex-induced (Gurvinder & Dinesh, 2013), media influence (Gentile, Coyne, & Walsh, 2011), violent video games (Adachi & Willoughby, 2011), prolonged television viewing (Mitrofan, Paul, & Spencer, 2009), low self-esteem (Bushman & Baumeister, 1998), food insecurity (Brinkman & Hendrix, 2011).

Aggression theories offer broader framework for these causes. Among conventional theories, instinct theory (Sigmund Freud) says, aggression is

because of release of dammed up energy. For instance, hunting and fighting instincts are found in frustrated ones. When aroused, they over-ride other instincts like sympathy, paternal instinct and become expressive through aggression and violence. Sigmund Freud calls these instinctive drives as ‘libido’, which are nothing but energy derived from Eros (life instinct) (Eron & Huesmann, 1994).

Dollard and his associates (Yale University), offered ‘frustration and aggression’ theory. When a person is frustrated, when his/her desires or wishes are let down, he/she responds aggressively. Thus, frustration always presupposes aggression (Dollard & Miller, 1939).

Theory of hormones and chromosomes got popularity from 1920’s. Discovery of human chromosomes led to research linking excessive male aggression with the presence of extra Y chromosome. Some researchers suggest that Y chromosome is the cause for aggression; and doubling Y chromosome doubles one’s aggression and violent behavior (Jarvik, Klodin, & Matsuyama, 1973).

Among the recent theories, cognitive neoassociation theory suggests that incidents involving aversion lead to negative affect (Berkowitz, 2012). These in turn stimulate expressions, thought process, memories, and response patterns like fight and flight. These fight and flight patterns give way to reactions like anger and fear respectively.

Social learning theory proposes that aggressive responses are acquired in similar ways, the people learn other intricate forms of social behaviors by way of direct experience or by learning from others (Bandura, 1978).

‘Script theory’ says that ‘scripts’ are situation-guided ‘stored-up behaviors’ (Huesmann, 1998). These stored up scripts could be retrieved later and may guide the behavior of an individual. This explanation of script theory is comparable to what yoga scriptures pronounce: consciousness has four faculties. First is the mind (*manas* - receiving faculty). Being non-judgmental, it keeps receiving the knowledge through senses, good or bad. Such knowledge is passed on to next faculty - *buddhi* (intellect - discriminating faculty). It qualifies the knowledge as good or bad, negative or positive. Such qualified knowledge is passed on to third faculty namely ‘*ahankara*’ (ego). This faculty may choose to retain either the positive or negative knowledge and reject the other. Having retained one of these two, it

becomes part of the knowledge retained. Further, this retained knowledge is passed on to the next faculty namely ‘*chitta*’ which ‘stores’ the knowledge for future retrieval.

Excitation transfer theory proposes ‘transfer of arousal’. When two disturbing events are disconnected by a short time period, arousal from first event is erroneously attributed to second and the person wrongly behaves aggressively to the second event (Bryant & Miron, 2003).

Social interaction theory advocates aggression as a function of social influence (Felson & Tedeschi, 1993). For example, coercion is employed to get something valuable, or to cause an intended change or outcome.

### **Studies on Effect of Yoga on Aggression and Violent Behavior**

Earlier research studies on effect of yoga on human aggression and violent behavior have considered varied sample sizes, intervention periods, diverse age groups of both sexes, varied ethnic groups, nationality, on different forms of aggression and violence (physical, verbal, covert), on normal as well as high-risk individuals. With all this diversity, the outcomes appear to be remarkably similar and encouraging. Even the Indian yoga scriptures do not limit or prohibit the application of yoga to any particular age category, gender or personality type and hence the scope is very wide as far as the application is considered.

### **Studies on Effect of Yoga on Aggression and Violent Behavior of At-Risk-Youth**

Aggression that manifests in childhood could lead to rejection from fellow children in childhood, relational problems during adolescence and criminal behavior in adulthood (Guerra, Rowell Huesmann, & Spindler, 2003). Hence, it is desirable for the parents, elders and teachers to identify this delinquent behavior at the earliest. In a pre and post quasi-experimental control group design, 49 students (females 54.4%) in 9<sup>th</sup> to 12<sup>th</sup> grades of school for at-risk youth, California, participated. The participants were academically heterogeneous, 33.3% black, 33.3% Hispanic, 4.3% Native

American, 6.2% Asian, 2.1% white and 20.8% mixed races. The youth were characterized by risk factors like aggression, academic failure, poor grades, high truancy, repeated suspension and expulsion. Transformative life skills (TLS – which includes *asanas*, *pranayama* and meditation) were taught by certified yoga teachers for 3-4 days a week in the first semester for 30 minutes per day. Yoga practitioners demonstrated significant decrease in nervousness, depression, psychological anguish, intrusive views, physical provocation, emotional stimulation; and significantly less likely to approve revenge and overall less aggression, suggesting possibility for yoga-based wellness program and TLS to favorably influence emotions among high-risk youth (Frank, Bose, & Schrobenhauser-Clonan, 2014).

As a part of countrywide violence prevention effort, Niroga Institute conducted transformative life skills (TLS) program (*yogasanas*, *pranayama*, and meditation), daily 60 minutes for 18 weeks involving 472 students from Alameda County Juvenile Justice Center. In another group 85 students participated in control group, which did not get the TLS. Additionally, a condensed 15 minutes TLS program was done in a large urban public high school. The yoga intervention was by certified yoga teachers. The scales used were perceived stress scale (PSS-10) and Tangney's self-control scale-13. At the end of the study period 'at-risk-imprisoned adolescents' reported lessened perceived stress and escalated self-control and self-awareness. They showed statistically significant improvement in stress resilience, self-control, and self-awareness. PSS reduced by a mean change of 1.31; self-control improved by a mean change of 1.68 (Ramadoss & Bose, 2010). Thus, these two studies are suggestive of feasibility of yoga intervention to youth with known background of risk factors like aggression, academic poor performance.

### **Studies on Effect of Yoga on Verbal Aggression**

Being one of the aggression expressions, 'verbal aggression' is use of abusive words to insult/hurt another person. In one of the studies, effect of yoga on verbal aggressiveness in 173 normal healthy adults was studied (age 17 - 62 years). Yoga group practiced integrated yoga module and control group practiced moderate physical exercises for one hour a day, six days a

week, for eight weeks. Self-administered verbal aggressive scale was used. Significant reduction in verbal aggression in yoga group ( $P = 0.0$ ) and non-significant upsurge in control group was reported (Deshpande, Nagendra, & Raghuram, 2008b). The aggression or violent behavior could manifest in any of the three kinds namely, verbal, physical or covert. Irrespective of the kind of aggression that manifests in an individual, yoga could offer a positive and a constructive change.

### **Studies of Effect of Yoga on Perceived Well-Being**

Yoga could be a preventive intervention and a way for improving children's perceived well-being, which Berger studied as outcome measures. Pilot study compared fourth and fifth-grade students. One program was offered yoga for one hour a week for 12 weeks; other program was not offered yoga. Outcome measures were emotional well-being assessed by Harter's global self-worth and physical appearance subscales; physical well-being was assessed by flexibility and balance. Yoga group showed less negative conduct scores and heightened comfort (Berger, Silver, & Stein, 2009). Thus the outcomes suggest that yoga, besides being a way for refining adolescents' perceived well-being, can also be a preventive intervention.

### **Studies on Effect of Yoga on Correlates of Aggression and Violent Behavior**

Some of the reports suggests that high levels of nervousness and aggression do affect parameters like grip strength, dexterity scores and optical illusion. In order to study these correlates a study was done, wherein, in the age range 12 to 16 years, equal number of subjects were there in each of the three groups namely, community home girls trained in yoga for a period of six months, community home girls who practiced physical exercises and girls who attended their regular schools. Degree of optical illusion was significantly higher in physical exercises group when compared to yoga group and regular school group. Hand grip was significantly less in physical exercises group compared to yoga group (Raghuraj & Telles, 1997). The

improved performance of the yoga group compared to physical activity group suggests that yoga practice has a beneficial effect on these parameters, which are considered to be the derivatives of aggression and violent behaviors.

### **Studies on Effect of Yoga on Personality Traits (Gunas as per Bhagavad Gītā)**

A person with calmness, purity, without pride and self-importance, having concern for others' pain, is 'sattvik'. A person with passions, cruelty, impure at heart and is subject to elation and depression in success and failure, is 'rajasic'. A person with unsteadiness, offensive, ego, deceitful, malevolent, procrastination, and indolence is 'tamasic' (*Bhagavad Gītā* 18.26-28). In one of the studies self-administered "*Bhagavad Gītā* Personality Inventory" was used to measure these *Gunas*. In the age group of 18 to 71, 226 subjects of both sexes participated. The yoga group practiced integrated yoga module and control group practiced physical exercises daily one hour, six days a week, for eight weeks. The outcomes demonstrated that the baseline scores for all areas for both groups did not differ considerably. There were noteworthy improvements in all domains in both groups. However, the number of persons who showed progress in *Sattva* and decline in *Tamas* was substantial in yoga group (Deshpande, Nagendra, & Nagarathna, 2009; Deshpande, Nagendra, & Raghuram, 2008a). Thus, evidencing that yoga could be a helpful tool in bringing out positive changes in personality traits, irrespective of the age and gender.

### **Studies on Effect of Yoga on Predictors of Aggression**

Variables like empathy, emotional quotient, general well being, and beliefs about aggression are found to be good predictors of aggression levels. When these variables are addressed through yoga, effect could be found in aggression level as a correlate. A pre-post yoga intervention study measured persistent attention, emotive intelligence (EQ), general wellbeing through general health questionnaire, and *Guna* personality –*sattva* (purity), *rajas* (craving) and *tamas* (brutality). Control group was not there. In the age

group of 17 to 63 years 108 subjects participated. Yoga practitioners demonstrated substantial changes in all variables ( $P < 0.001$ ) excepting 'sattva'. EQ and overall health variables compare considerably with each other and negatively with *tamas*. EQ and *tamas* form positive and negative forecasters of health. *Sattva* correlates positively with EQ signifying that a *sattvic* personality demonstrates improved self-control. This recommends that yoga practice may improve *guna* personality (traits) and can stabilize EQ (Khemka, Hankey, & Ramarao, 2011).

### Studies on Effect of Yoga on Cognitive Functions

When a person longingly dwells on sense objects, gradually preference towards them develops. This preference develops desire; desire produces anger and aggression. Aggression brings about delusion, and delusion leads to loss of memory. Loss of memory culminates in destruction of discriminative intelligence, which in turn, brings about complete devastation to the person (*Bhagavad Gītā* 2.62-63). Thus, aggression and violent behavior affect the cognitive functions like thinking, memory, analyzing, perception and judgment. In one of the studies, effect of yoga on cognitive functions and attitude towards violence (ATV) in 100 rural school children, aged 13-15 years, of both sexes, in 8<sup>th</sup> and 9<sup>th</sup> grades was studied. The subjects were divided into yoga and control groups. The yoga group practiced yoga for one hour a day for 10 days and control group practiced physical exercises. Digit letter substitution test was used to measure cognitive function, whereas ATV scale was used to measure attitude towards violence. The outcomes showed significant change in cognitive functions, 42% and 24% mean change in yoga and control groups respectively. But there were no noteworthy results in ATV, 3% and 12.8% mean change in yoga and control group respectively. However, yoga group experienced other benefits like increased flexibility, improved digestion, good sleep, relaxation and were cooperative with teachers/parents (Reddy, 2015).

Adolescence is the age when the aggression is at its peak and if uncorrected, it could manifest at all age points of an individual, say research studies. A study was done to find out the effect of yogic practices like Suryanamaskara and pranayama on 30 adolescents' logical memory,



aggression and anxiety levels. The yoga intervention was given for a period of 25 days and the outcomes measured were logical memory, anxiety and aggression levels by aggression scale. The Result showed statistically significant decrease in post anxiety and aggression levels and improved logical memory of participants (Singh, 2015).

In another study, yoga practitioners outdid physical exercise practitioners on variables like trait anxiety, somatic anxiety, cognitive anxiety, aggression and achievement impetus (Vengatesh, 2014).

### **Studies on Effect of Yoga on Somatic Grievances of Women and Girls**

A study on physiological and psychological effects of hatha-yoga in healthy women showed no considerable changes between the clusters regarding endocrine parameters and BP. The yoga group had substantial reduction of heart rate all through the yoga practice. The study accounted for substantial variances between groups in psychological parameters. Yoga group displayed distinctly higher scores in life fulfillment, morale, extravertedness, lower scores in nervousness and aggression, frankness, emotionality and somatic grievances. Substantial dissimilarities could be witnessed concerning handling of stress and temperament (Schell, Allolio, & Schonecke, 1994). The study suggests that the derivatives of high levels of aggression and violent behavior like hypertension and high heart rate do get improved with the intervention of yoga.

### **Conclusion**

It is evident from various research studies that yoga intervention on subjects of varied age, ethnicity, and nationality have shown remarkably similar results and findings are quite encouraging to deal with the problem of aggression through yoga. Researches on aggression and violence have progressed to a stage where a unifying construction is needed in the sense that different kinds of interventions (yoga, Transformative life skills, counseling, addressing predictors of aggression and violent behavior) can be blended to be more effective in addressing this delinquent human behavior. Further, there is a need for standardizing the yogic intervention module and

period of intervention, so that this delinquent human behavior is addressed effectively and the results could be more evident. It also helps to scientifically establish the basis for transformation claimed by Indian yoga scriptures. Man is a social being. Sociability, that is one's ability to cordially blend with the fellow beings in the societal structure, is one of the important facets of health according to World Health Organization. Indian yoga scriptures deal extensively with this subject. There is a need to use this ancient wisdom, claimed by Indian scriptures. This would provide a new and effective framework to deal with the problem of human aggression and violent behavior. Research is scarce particularly concerning the effects of yoga on domains like human beliefs and attitude towards aggression and violence, normative beliefs supporting aggression, perception towards alternatives for violent methods normally adopted by aggressors, and perceptions towards social norms for aggression and alternatives.

The yoga scriptures (including scientific researches) claim that irrespective of the age, this ancient science of yoga can be taught. The detailed yoga protocol intervention to suit different age groups can be well defined and standardized and the results can be documented for the benefit of all, which helps in understanding the methods researched to be effective in correcting aggressive and violent behavior, and understanding the nature, causes, contributive factors, neuro-psychological changes, gender differences, forms of aggression (latent and manifest), relationship between select behavioral-characteristics as predictors of aggression. This could be one of the valuable, cost effective, alternative (or complementary) methods that involve no drugs and no invasive treatments to correct this delinquent human behavior.

Excepting the theory of hormones and chromosomes, most of the aggression theories deal only with the mind as the root instrumental cause for aggression and violent behavior. Yoga deals comprehensively with this subject. Hence there is a need for the researchers to look at this ancient, time tested method advocated by Indian yogic scriptures.

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