

## **BENEFITS OF YOGA FOR SELF-ESTEEM AND SELF-EFFICACY: A QUASI EXPERIMENTAL INVESTIGATION AMONG NORMAL ADULTS**

**Ms. Mrunal Paranjape**  
Research Scholar  
SPPU, Pune

**Dr. Narendra Deshmukh**  
Research Supervisor  
SPPU, Pune

### **ABSTRACT**

Yoga has received worldwide popularity as a fitness and wellness regime. The classic Indian yoga scriptures tell us that yoga is primarily for mental health and well-being. This research attempts to study the effects of yoga intervention on two important psychological concepts- self-esteem and self-efficacy. Both these factors have associations and correlations with many important psychological aspects. Improvement in them can lead to far reaching positive effects on mental health. This research tries to assess the effect of yoga on these two variables with help of quasi experimental pre-post-test design with a control group. The benefits of yoga assessed during this study are further discussed along with its limitations and implications.

**KEYWORDS-** Yoga, Self-esteem and Self-efficacy.

### **Introduction:**

Yoga now has become a commonly known term, no matter where you are York, New York or New Delhi. Its popularity reaching further and farther from the subcontinent it was originally conceived in. The word Yoga is one of the most versatile words in Sanskrit language (Feuerstein, Kak, &Frawley, 2005). It means range of things from means or way to application or method (<https://www.sanskritdictionary.com>). Though historical evidences of Yoga can be found from pre-Vedic era (Basavaraddi, 2002), the first mention of this word comes in Rigveda. Later among the Vedanta, Taittiriya Upanishad uses it for the first time in spiritual sense (Feuerstein, et.al. 2005).

Ashtangaa Yoga system as the name suggests consists of total eight limbs or parts. The Yoga Sutra written by Patanjali is the central and primary book for this system. These eight limbs start from Yama यम then follows Niyamaनियम, Aasanआसन, Pranayamप्राणायाम, Pratyaharप्रत्याहार. These first five limbs are called Bahirang or external limbs of Yoga. The next three limbs viz. Dharanaधारणा, Dhyanध्यान and Samadhi समाधि form the Antarang or internal parts of Yoga (Radhakrishnan, 1948, Iyengar, 2016, Iyengar, 2018). These three are considered as more advanced practices.

Patanjali's Yoga Sutra lays down the guidelines for practising Yoga. The ultimate aim of Yoga is to reach 'Kaivalya' by achieving Moksha or liberation (Radhakrishnan, 1948). This path towards yoga requires preparation of body for gaining control over mind. Patanjali Yoga Sutra's second verse says 'Yoga is stilling the waves or fluctuations of mind / consciousness'. All the eight parts of Yoga Darshan lead towards quieting and stilling the mind (Iyengar, 2018).

### **Self-Esteem**

Self-esteem has a rich history and has received a lot of interest both from researchers and lay-persons for many decades. Generally counted under the category of self-concept (Guindon, 2010), it is argued to be essential to human functioning (Brown & Marshall, 2002). It's chronology (Guindon, 2010) in the field of modern psychology can be traced from William James as its earliest investigator to neo- Freudians like Karen Horney and Alfred Adler, along with Rogers and Maslow including it as a 'Being need' in his hierarchy of needs, surpassed only by self-actualisation. Later on, Rosenberg and Coopersmith developed the empirically based theories of self-esteem (Guindon, 2010).

Rosenberg (1965, Hefferon&Boniwell, 2011) defined it as the 'totality of the individual's thoughts and feelings with reference to himself as an object. Self-esteem is argued to be a basic human need which universally requires preserving and developing positive sense of self (Greenberg, 2008,Hefferon&Boniwell, 2011). It stays to be an attractive topic for study, as it shows associations with come central concerns in human life, positive aspects like happiness, perseverance and negative aspects like vulnerability for various disorders like depression and their comorbidity (Guindon, 2010).

### Self-Efficacy

The concept of Self efficacy (S.Ef.) was first developed by the famous Psychologist Albert Bandura. It is part of his renowned 'Social Cognition Theory'. Bandura (1997) himself defines it as 'the belief a person has that they can reach their goals or a desired outcome'. Self-efficacy is the expectation whether one can master a situation and create favourable outcome based on his/her beliefs about individual competence in that field (Hefferon&Boniwell 2011). Bandura (1994) proposes that a person's Self-efficacy beliefs govern how he/she would feel, think, motivate oneself and behave. It provides a foundation for motivation, well-being and accomplishments (Hefferon&Boniwell 2011). These views/ beliefs lead to diverse effects chiefly through four processes viz. cognitive, motivational, affective and selection (Bandura, 1994).

The concepts of Self-esteem and Self-Efficacy continue to gain research attention in order to know more about the relationship between the two. Judge et. al. (2002) suggested that Self Esteem and Self Efficacy along with Neuroticism and Locus of Control happen to have same second-order factor behind them. They called it 'Core self-evaluation' at it forms the foundational construct/factor behind most of the self-oriented evaluation in human psyche.

There are some studies which consider similar research question. Many studies based on school aged sample are available to consider the relationship between Yoga and S.E. Bhardwaj A.K. and Agarwal G. (2013) conducted study on pre-adolescent school children and found that Yoga brought positive change in level of overall S.E. at 0.05 significance level along with social S.E. and general S.E. at 0.01 statistical level of significance. Sethi, H. R. Nagendra, and Tikhe (2013) did a study on school girls between age ranges of 14-17 years old. The study included 5 days Yoga intervention including lectures and practices for 3 hours every day. The study shows significant increase in SE (P=0.001) and attention (P < 0.001). A pilot study (N= 34) was done in an orphanage (Tajvani R. et.al., 2016) where participants went through two weeks of Yoga intervention. The results indicated significant improvement in self-esteem (P = 0.001). It also showed significant decrease in reduction (P = 0.001) in anxiety and depression.

An adult population based study on SE which was conducted by Deshpande S., Nagendra H.R. and Nagarathna R. (2008) also showed significant improvement in Yoga group on Global SE (P = 0.036) as compared to group with physical exercise program. Significant improvements were also seen for Yoga group on Moral and self-esteem (P = 0.003) and Body and physical appearance (P = 0.003) as compared to physical exercise group. The study was done with 226 subjects of 18 to 71 years old including both males and females. Both groups received respective supervised practices for one hour daily for six days a week, for total eight weeks. This study is one of the few, which included a normal adult population. These studies shed some light on the relationship between Yoga and Self-esteem.

Some studies are available which explore the effect of Yoga on Self-efficacy. Das et.al. (2016) studied the effect of Yoga based personality development program on Self-efficacy in school children. Total 210 individuals between ages 11-16 years participated in this study. The yoga group was found to have improved self-efficacy after 10 days of yoga intervention, along with cognitive aspects like visual-motor integration, visual perception, planning ability etc. Srilakshmidevi and Suseela V. (2019) did a study on college student volunteers, where intervention for group A included select asanas, group B included some pranayama and meditation practices, whereas group C was a control group. Significant effect of Yogic intervention was found, but it was observed that pranayama and meditation practice showed better results on S.Ef. than just asana practice.

A research done using 16 week Bikram Yoga intervention (Hewett Z.L. et.al., 2018) indicated that general SEf (P= 0.034), perceived stress among stressed and sedentary adults. Bikram Yoga is a format of Yoga which includes performing a series of poses in a heated room. The research included 3-5 classes per week and found that attendance was significantly associated with these outcomes. Another small survey done by Mishra K.A. and Asthana H.S.(2016) found that individuals who practice SudarshanKriya regularly had better SEf than non-practitioners. A randomized controlled trial of yoga program was done on women with PTSD (post-traumatic stress disorder) symptom (Martin et.al., 2015). Total 38 women were included in the study. Results of the study showed no significant changes in self-efficacy in experimental group. The current study endeavours to continue this research journey forward.

Few other studies are also available which look at the relationship between yoga and other types of S.Ef. For example, a study done by Yi-Chin Sun (2010) on pregnant women in Taiwan, where the research included pre-natal yoga programme on 45 women. The findings showed reduced pregnancy discomforts and improved childbirth self-efficacy. But such studies are beyond the scope of the current study, as this research focuses and deals with general self-efficacy only and not specialised subtypes of S.Ef.

### Method

The Objective of the current study is to evaluate the effect of Yoga intervention on self-esteem and self-efficacy. The study started with a literary review which leads to presupposition that levels of self-esteem and self-efficacy would improve as a result of Yoga intervention.

#### Research design:

The participants were assigned to one experimental and one control group by non-randomised method. Testing was done twice, first before starting the intervention and second after the completion of intervention. Hence the resulting design is 'pre-post-test quasi experimental design' with non-equivalent control group. (Shadish, Cook & Campbell, 2002)

	Pre-test	Intervention	Post-test
Experimental group	Yes	Yoga intervention	Yes
Control group	Yes	Absent	Yes

To improve the equivalence between both groups, control group was matched on age, gender and education. Individuals were also selected from similar socio-economic strata.

#### Sample:

Total 134 individuals participated in the study, 67 individuals in each group, 32 males and 35 females. Participants were selected by incidental sampling method. Adult participants above 18 years of age were chosen from Pune district urban area with minimum education of higher secondary matriculation. The mean age for total sample was 35.95 yrs. (S.D. =10.9), for males it was 35.87 yrs. (S.D.=10.72) and females 36.02 yrs. (S.D.= 11.21). Age range of sample was 18 to 60 years.

Individuals who had any psychological disorders or major physiological problems (which would pose significant restriction while performing Yoga) were not included in the sample. Individuals who were already practicing yoga were also excluded.

For measuring self-esteem, the Rosenberg self-esteem scale developed by sociologist Dr. Morris Rosenberg (1965) was used. It is one of the most widely used measures of self-esteem (Guindon, 2010). It is a ten-item Likert type scale, with items answered on a four-point scale from 'strongly agree' to 'strongly disagree'. The scale measures state self-esteem by asking the respondents to reflect on their current feelings. The Rosenberg self-esteem scale is considered a reliable and valid quantitative tool for self-esteem assessment (Lopez & Snyder, 2003).

For assessing self-efficacy, the General Self-Efficacy Scale was used. Ralf Schwarzer & Matthias Jerusalem developed the original German version in 1979 and it was later revised and adapted to 26 other languages by various co-authors. It has 10 items with a 4-point Likert scale. This scale was formed to assess a general sense of perceived self-efficacy as to predict coping with daily hassles as well as adaptation after experiencing all kinds of stressful life events.

#### Procedure:

After explaining the research and receiving their signed consent for participation, personal data sheet and pre-testing was completed. The experimental group received the Yoga intervention after that post-testing was conducted. Control group went through pre and post testing in the same way, with same time gap, but did not go through the intervention before post-testing.

The intervention was based on tenets of Patanjali's yoga. It included total 24 sessions, six sessions per week, each session of 60 minutes. That means total time was of 24 hours. Content of the intervention was designed with help of an expert yoga trainer. Sessions included warm up exercises followed by various yoga exercises, Pranayam practices and meditation exercise. Intervention was executed under supervision and guidance of qualified and certified yoga experts. Uniformity in execution of intervention was ensured.

#### Statistical analysis:

Initially descriptive statistics (mean, median, SD) was calculated for both groups. After that, 'independent samples t-test' was performed on gain scores (i.e. score difference when pre-test scores were subtracted from the individual's post test scores of the respective test). This eventually indicates the extent of difference between gain scores or change scores of experimental group and control group. Since the study involved directional hypotheses, one tailed significance levels were considered. For this study, S.P.S.S. version 23 was used for statistical analyses. For exploring the effect size for both dependent variables, 'Cohen's d' was calculated.

#### Result and Discussion

The famous Yoga Guru B. K. S. Iyengar (Goodreads, 2020) once said about Yoga that “It is through the alignment of the body that I discovered the alignment of my mind, self, and intelligence.” Yoga has centuries of history in India and now has received further interest across the globe. Yogis have obviously been experimenting with this spiritual practice all along, as a result they explored and expanded Yogic repertoire over centuries. Now, the modern researchers are also studying various aspects related to Yoga. It also holds a proud place in the field of Indian Psychology.

Table 1: Group wise Descriptive statistics for Gain Scores

	N	M	SD	SEM
SE Expt. Grp.	67	.63	3.630	0.443
SE Control Grp.	67	-.28	2.917	0.356
SEf Expt. Grp.	67	.10	5.138	0.628
SEf Control Grp.	67	-.42	3.229	0.395

Table 1 shows the mean, standard deviations and Standard Error of Mean of Gain scores, for both dependent variables- SE and SEf, for both groups- Experimental and control group. As given before gain score or change score or difference score (American Psychological Association, 2015) is calculated by deducting pre-test score of each individual from his/her post-test score. Such Gain score is an indicator of increase or decrease in score over time, so it can be used to perform further statistics to find out the statistical significance of such increase or decrease in scores of group.

Table 2: Independent Samples T test results and ‘Cohen’s d’ for effect size

	M diff.	Standard Error Diff.	p value	df	Sig tailed) (1	Cohen’s d
SE	0.910	0.569	1.600	132	0.0559	0.276
SEf	0.522	0.741	0.705	132	0.2411	0.121

Table 2 comprises of results for independent samples T test along with Cohen’s d scores. The T test results for SE and SEf show that both ‘p’ values are not significant at 0.05 level, which means that null hypotheses are sustained. Though, the significance for SE is 0.0559 which is pretty close to the 0.05 significance level. It indicates towards the possibility of causal relationship between yoga practice and SE. The means of gain scores for both dependent variables (D.V.) (Table 1) also show that experimental groups showed better gains than respective control groups. The ‘Cohen’s d’ is a test for estimating the size of effect on the D.V. Here the ‘Cohen’s d’ shows effect size of 0.278 and 0.121 for SE and SEf respectively. Both effects could be interpreted as of small size (Howitt & Cramer, 2011, Field, 2013).

The results though not statistically significant, indicate towards further scope and need for researching about mental benefits of Yoga. The available research literature demonstrates many studies found significant improvement in S.E. and S.Ef. after Yoga interventions (Bhardwaj et.al.,2013, Sethiet.al., 2013, Deshpande et.al., 2008, Das et.al., 2016, Srilakshmi devi & Suseela, 2019). More research on Yoga regarding not just SE, SEf but various other concepts related to Self is required to clarify the causation further. The classical scriptures have always paired Yoga with Self, it is considered primarily a tool for developing and expanding Self and not for physical strength and health as it is popularly perceived. Hence, Yoga, first and foremost is meant for psychological development. There is also need for expanding the Yoga based researches for normal, physically and psychologically healthy population especially adults, as much of the available research on Yoga focuses on people with diseases or disorders. Many of them are focused on school or college students (for e.g. Bhardwaj et.al., 2013, Sethiet.al., 2013, Das et.al., 2016, Srilakshmi devi & Suseela, 2019), but as they belong to earlier stages of development of Self, the results might not be generalizable to adults. Yoga is

meant for everyone and the researches on healthy adult populations will help to assess the utility of Yoga for masses.

The results of present study and other literature can help building Yoga programmes for various target populations, where the aim is to improve the SE, SEf or even other aspects related to them. As mentioned in the introduction, SE and SEf both have far reaching effects and correlate with susceptibility for various psychological disorders like depression, eating disorders, body dissatisfaction, drug abuse, etc. (Guindon, 2010, Hefferon&Bonniwell, 2011) Hence, use of Yoga for helping individuals with related disorders, non-clinical problems or even for improving mental health can be deliberated. SE and SEf though would look mere two variables, but if any intervention helps for their betterment, it would lead to far reaching improvements, as they both are part of Core Self Evaluation and correlated with many fundamental factors of mental health.

Sally Kempton once said, “The very heart of yoga practice is ‘Abhyasa’ – steady effort in the direction you want to go” (Wise Old Sayings, 2020). Abhyasa or consistent practice is fundamental to Yoga Philosophy. Due to various practical constraints, the duration of this intervention was possible for just one month. If same research design is used for longer duration, more prominent results as well as better interpretations and implications could be expected. Especially if similar research is undertaken by Yoga institutions that have residential campuses as well, it would lead to better control over extraneous variables and would give better results.

### **Conclusion:**

To conclude, as the famous Yoga Guru T. Krishnamacharya said (Yoga U., 2016), “In the practice of Yoga one can emphasize the body, the mind or the self and hence the effort can never be fruitless.” Yoga can offer far-reaching contribution to mental and physical well-being for humankind. This field is full of explorative opportunities and needs more, in-depth attention.

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