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Effect of Hatha-yoga on Self-efficacy Level of Girl Students

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Abstract

Yoga is an inward journey that creates an awareness of yourself and leads you to self-transformation. It is an ancient science of India that emerges with the emergence of culture and society. The glimpse of Yoga can be easily seen on the oldest Veda of the world (i.e. Rigveda). However, for a layman Yoga and Hath-yoga are two similar terms/concepts. But actually Yoga is a broad concept and Hath-yoga is one of the types of Yoga. Hatha-yoga generally suggests *Asanas, Pranayamas, Bandhas Mudras, Kriyas and Nadanusandhan*. In the present study we are concerned only with Asanas, Pranyamas and Kapalbhathi Kriya.

The objective of this study is to examine the effect of Asanas, Pranayamas and Kapalbhathi Kriya on Self-efficacy level of girl-students. This is an experimental study which follows pre & post-test experimental designs. A group of 45 volunteer girl students studying in VIIIth to Xth class have been selected from the campus of Govt. Sr. Sec. School, Ritauli, Rohtak. The age group range lies between 12 to 15 years. Furthermore, these 45 students have been divided equally into three groups on random basis, consisting of 15 students each. Group A has given some select Yogasanas, Group B has given some select Pranayamas and Kapalbhathi Kriya, and Group C is a controlled group and has not given any type of exercise except general warming-up exercises. Here Group A and B have gone through yogic exercises for one hour daily during morning session for 6 days per week during twelve-week training program under strict supervision of the researcher. All the three groups has been pre-tested and post-tested for select psychological component, i.e. self-efficacy. The study has experimentally proved the authenticity of Yogic training in enhancing the Self-efficacy level of Girl students. Moreover, the results clearly indicate that Pranayamas and Kapalbhathi Kriya are more effective than Asanas in enhancing Self-efficacy level of girl students.

Keywords: Hath-yoga, Asana, Pranayama, Kriya, Self-efficacy.

Introduction

Yoga is an inward journey that creates an awareness of yourself and leads you to self-transformation. It is an ancient science of self-development and system that purifies your mind and body and maintains perfect balance and harmony between them. In another words, it is an art of controlling your mind, body and breath and unlocking the hidden potential energies.

Originally, the concept of Yoga has emerged from Ancient Indian literature. Indian literature is a treasure of vast knowledge based on systematic, scientific and empirical research by Authoritative Research Scientists (*Maharishis*). Yoga is totally an Indian philosophy and from India it spread all over the world. The evidences of the philosophy of Yoga can be seen even in the oldest Indian literature, viz. Vedas. In the *Mantras* 5/81/1 of Rigveda, it is purported that the creature (human) must do God's worship (*Upasana*) everyday continually and during *Upasana* the creature must freeze his mind/psyche (man) in God (*Ishwar*).

For a common man, there is no difference between Yoga and Hatha-yoga. Generally, either Hatha-yoga or some parts of Hatha-yoga like Asana and Pranayama are practiced by common people. And for common people these Asanas and Pranayama is Yoga. However, Yoga is a very broad concept and it has many types. Hatha-yoga is one of the types of Yoga and further Asanas and Pranayamas are only the parts of Hatha-yoga. So, it's necessary to understand the concept of Yoga in a complete sense (wholesome).

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Hatha-yoga: Hathayoga is also famous with other names like *Hatha-vidhya*, *Kundalini-yoga* and *Prana-yoga*. The word *Hatha* means with firmness or perseverance and consists of two words *ha* meaning Sun (*Surya*) and *tha* meaning Moon (*Chandra*). The word *Surya* and *Chandra* are defined in various ways. But according to general agreement *Surya* denotes *Prana-vayu* and *Chandra* denotes *Apan-vayu*. Therefore, to control over both the *Vayu* (air) through Pranayama is Hatha-yoga. So Hatha-yoga is a practice in which the *Prana* through *Ida* and *Pingla naadi* by the way of *Susumana nadi* (spinal nerves/medulla spinalis) piercing six *Chakra* and established in *Sahasrara Chakra* at the stage of *Samadhi*. For this practice Hatha-yoga generally suggests *Asanas*, *Pranayamas*, *Bandhas*, *Mudras*, *Kriyas* and *Nadanusandhan*. All these means help in the redemption of *Tamoguna* and *Rajoguna* and emergence of *Satoguna* and ultimately *Prana* enter into the Medulla spinalis (*Susumana nadi*). This is also known as awakening of *Kundilini*.

The practice of Hatha-yoga has been from ancient time of preceptor-disciple tradition. Hatha-yoga is a manner of exercitation to achieve the highest state of spirituality. It also stout our body and strengthen our mind as well as senses. As the stage of spirituality can't be achieved without healthy body and concentrated mind. So, in Hatha-yoga, the special emphasis is given to make the body healthy and sturdy; mind and senses concentrated and determined. This exercitation preserve, protect and purify our body, nerves, senses and mind.

Asana: The word *Asana* connotes different meaning in *Astanga-yoga* and in *Hath-yoga*.

In Patanjali's *Yoga Darshanam*, *Asana* is defined as '*Sithir Sukham Asanam*' i.e. An *Asana* is posture in which we can sit in a steady and comfortable manner. It is the third limb of Patanjali's eightfold path following the *Yamas* and the *Niyamas*. Any particular poses is not specify in any sutra of *Yoga Darshanam*. *Yoga Darshanam* of *Maharishi Patanjali* provides us clear cut path of *Moksha (Kavalya)* through *Samadhi*. *Astanga Yoga* of *Maharishi Patanjali* describes *Asana* as a stable and comfortable sitting posture used for meditation.

In Hatha-yoga, the term *Asana* is used for a particular physical posture, which not only provides the practitioner physical and mental health but also provides a path for opening the energy channels and psychic centers, i.e. it also helps in *Kundlini Jagran*.

Historically, different texts and *Rishis* have described different numbers of *Asanas*. For Instance, the *Shiva Samhita* describes 84 *Asanas*, the *Hatha-yoga Pradipika* describes 15 *Asanas* and the *Gherand Samhita* describes 32 *Asanas*.

In Present study, the word *Asana* is used in the context of Hatha-yoga. So the meaning of *Asana* is also taken in the context of Hatha-yoga.

Pranayama: The word *Pranayama* consists of two words, *Prana* means breath and *Ayama* means dimension or expansion. In *Yoga Darshanam*, *Pranayama* is to stop the motion of inhaling and exhaling as per strength. In another words, to control or regulate the life force (i.e. *Prana*) is called *Pranayama*. Different types of *Pranayamas* are described in various texts. In the *Yoga Darshanam* three main types of *Pranayama* are described viz. *Bahiya Pranayama*,

Abhyantra Pranayama and *Stambhvriti Pranayama*, whereas, in the books *Hatha-yoga Pradipika* and the *Gherand Samhita* eight types of *Pranayamas*, with slight difference from each other, are described.

In Present study, the word *Pranayama* is used in the context of Hatha-yoga. So the meaning of *Pranayama* is also taken in this context.

Kriya: The word *Kriya* in the study connotes the *Shudhi Kriyas* or the purification processes. In Hatha Yoga, six purification processes are described viz. *Dhoti*, *Vasti*, *Neti*, *Nauli*, *Tratak* and *Kapalbhati*. Among these six *Kriyas*, only *Kapalbhati* comes in the purview of our study.

Self-efficacy: Self-efficacy, coined by Albert Bandura, is the optimistic self-belief in one's own competence to accomplish tasks or to achieve goals. In simple words, Self-efficacy refers to people's own belief about their own capabilities to exercise control over their own activities. Self-efficacy or personal efficacy is commonly known as Confidence. It plays a major role in determining our chances for success. It is a confidence in one's own ability to achieve desired results or to deal with the challenges of life. It reflects confidence in the ability to exert control over one's own behavior, motivation and social environment. It affects every area of human effort. Through the determination of personal belief, regarding his/her power to affect circumstances, self-efficacy firmly influences both the decision a person most likely to take and the power a person actually has to meet the challenges perfectly. Some psychologists give more importance to self-efficacy than talent to accomplish any task successfully.

Mahatma Gandhi perfectly understood and described the pivotal role of self-belief in our lives in the following words: *Your beliefs become your thoughts. Your thoughts become your words. Your words become your actions. Your actions become your habits. Your habits become your values. Your values become your destiny.*

Procedure and methodology

Research Design: The study is an experimental one, where pre & post-test experimental designs have been followed. Three groups of students were selected and given specific exercises with general warming up. Group A has given some select *Yogasanas*, Group B has given some select *Pranayamas* and *Kapalbhati Kriya*, and Group C is a controlled group and has not given any type of exercise except general warming-up exercises. All the three groups has been pre-tested and post-tested for select psychological component, i.e. self-efficacy. The change in the dependent variables or say components is credited to the particular exercises given to the groups.

Sample & training programme

In the present study purposive sampling procedure has been followed. A group of 45 volunteer girl students studying in VIIth to Xth class have been selected from the campus of Govt. Sr. Sec. School, Ritauli, Rohtak. The age group range lies between 12 to 15 years. Furthermore, these 45 students have been divided equally into three groups on random basis, consisting of 15 students each. Here Group A and B have gone through yogic exercises for one hour daily during morning session for 6 days per week during twelve-week training program under strict supervision of the researcher.

Selection of training exercises: The different groups were given different exercises.

Group (A): Asana group practiced the following twelve Yogasanas during training.

Asanas

1. Halasana
2. Matsyasana
3. Paschimottanasana
4. Chakarasana
5. Padahasta Asana
6. Ardha Chandrasana
7. Yoganindrasana
8. Dhanurasana
9. Kurmasana
10. Mayurasana
11. Naukasana
12. Shirshasana

Group (B): Pranayama and Kapalbhathi group was given the following five Pranayamas and one Kapalbhathi Kriya during training:

Pranayams and Kriya

1. Bahiyah Pranayama
2. Abhyantra Pranayama

3. Stambhavriti Pranayam
4. Bhastrika Pranayama
5. Bhrumri Pranayama
6. Kapalbhathi Kriya

Tools Used

General Self Efficacy Scale (GSE) by Matthias Jerusalem and Ralf Schwarzer (1995). As a part of more comprehensive questionnaire, this is usually a self administered scale. Preferably, 10 items are randomly combined with a large number of items that have the same response format. The responses are made on a 4 (four) point scale. One, two, three and four points are given to the four particular types of responses as given below:

1 = Not at all true, 2 = Hardly true, 3 = moderately true, 4 = exactly true.

Sum up the responses of all the 10 items to yield the final composite score with a range from 10 to 40.

Results and discussion

A paired t-test is applied on the paired data obtained by pre-test and post-test from each group individually to determine whether there is a statistically significant mean difference between pre-test and post-test values of that particular group. A sample of 15 subjects in each group was taken to observe the effect of yogic treatments. Data is analysed and interpreted with the help of tables and figure.

Table 1: Paired t-test statistics of Self-efficacy for two Experimental Groups and one Control Group

Groups	Pre - Test		Post -Test		T Value	P Value
	Mean	S.D.	Mean	S.D.		
Asana	18.13	2.19	25.60	2.79	11.68	0.00**
Pranayama & Kriya	18.06	2.31	28.73	1.53	29.56	0.00**
Control	18.33	2.38	18.73	2.08	1.70	0.11

*P< .05 ** P<.01

Table 1 indicates the mean values of pre-test and post-test of two Experimental Groups (viz.- Asana and Pranayama-Kriya) and one Control Group. It facilitates the comparison of pre and post means for a particular test. It also shows standard deviations, t-values and p-values of all three groups.

For Asana Group, the post-test mean value is 25.60 in comparison to pre-test mean value of 18.13. The t-value [$t(14) = 11.68, p = 0.00$] of Asana Group is found statistically highly significant at 5% level of significance for 14 degree of freedom.

For Pranayama-Kriya Group, the post-test mean value is 28.73 in comparison to pre-test mean value of 18.06. The t-value [$t(14) = 29.56, p = 0.00$] of Pranayama-Kriya Group is found statistically highly significant at 5% level of significance for 14 degree of freedom.

For Control Group, the post-test mean value is 18.73 in comparison to pre-test mean value of 18.33. The t-value [$t(14) = 1.70, p = 0.11$] of Control Group is found statistically insignificant at 5% level of significance for 14 degree of freedom.

The intra-group differences between the means of pre and post tests of Self-efficacy test are graphically represented in Figure given below:

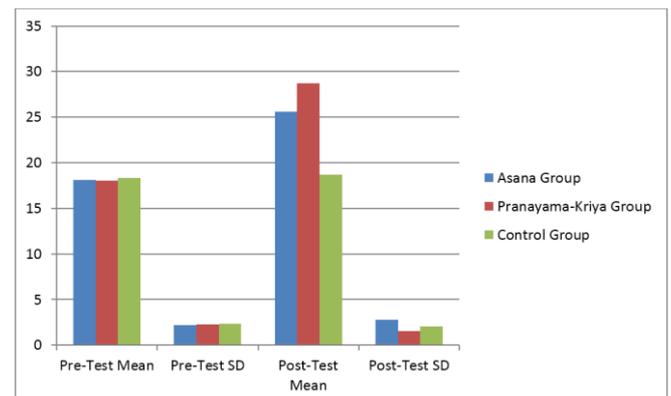


Fig 1: Graphical representation of pre-test and post- test Means and Standard Deviations of Self-efficacy test for two Experimental Groups and one Control Group.

Table 2: Analysis of Covariance for two Experimental Groups and one Control Group on Self-efficacy Test

	Asana Group	Pranayama-Kriya Group	Control Group	Ss	DF	MS	F	P
Pre test Means	18.13	18.06	18.33	B.G: 0.57 W.G. 222.00	2 42	0.28 5.28	0.05	0.94
Post Test Means	25.60	28.73	18.73	B.G: 784.84 W.G. 203.46	2 42	392.42 4.84	81.0**	0.00**

*P< .05 ** P< .01

ANOVA is applied on the data obtained by pre-tests (of 45 subjects of all three groups) and also on post-tests (of same 45 subjects of all three groups) separately, to determine whether there is a statistically significant mean difference among pre-tests' and post-tests' values of these groups. A sample of 15 subjects in each group was taken to observe the effect of yogic treatments.

Table 2 highlights the pre-test and post-test means of Asana Group, Pranayama-Kriya Group and Control Group. It also shows sum of square between groups and within groups, degree of freedom, mean square, F-value and P-value.

The calculated F-value [$F(0.05, 2, 42) = 0.05, p = 0.94$] of pre-tests is found statistically insignificant. So the pre-tests mean differences between the groups are insignificant.

The calculated F-value [$F(0.05, 2, 42) = 81.00, p = 0.00$] of post-tests is found statistically highly significant. So the post-tests mean differences between the groups are significant and further Scheffe's Post-hoc in ANOVA is applied on post-tests values of all three groups to obtain results by multiple comparisons between groups.

Table 3: Multiple Comparisons of post-test for Self-efficacy by Scheffe Method in Post-hoc test in ANOVA

Asana Group	Pranayama-Kriya Group	Control Group	Mean Difference	P Value
25.60	28.73		3.13	0.002**
25.60		18.73	6.86	0.000**
	28.73	18.73	10.00	0.000**

*The mean difference is significant at the 0.05 level.

**The mean difference is significant at the 0.01 level.

Table 3 shows multiple comparisons of post-tests of all three groups on Self-efficacy by Scheffe's Post-hoc test in ANOVA.

Post-tests' multiple comparisons

The post-test mean difference of Asana group with Pranayama-Kriya Group is 3.13. The p-value indicates that their mean difference is statistically highly significant.

The post-test mean difference of Asana Group with Control Group is 6.86. The p-value indicates that their means difference is also statistically highly significant.

The post-test mean difference of Pranayama-Kriya Group with Control Group is 10.00. The p-value indicates that their means difference is also statistically highly significant.

On the basis of the results, it is analyzed that there is a significant effect of yogic training on the Self-efficacy level of girl-students. From the above results, it can be inferred that Pranayamas and Kapalbhathi Kriya are more effective than Asanas in enhancing Self-efficacy level of Girl-Students.

Conclusion

The study has experimentally proved the authenticity of Yogic training in enhancing the Self-efficacy level of Girl students. Moreover, the results clearly indicate that

Pranayamas and Kapalbhathi Kriya are more effective than Asanas in enhancing Self-efficacy level of girl students.

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