



DIFFERENT TYPES OF BHASTRIKA PRANAYAMA: REPEATED MEASURES TRIALS WITH DIFFERENT TREATMENTS TO STUDY THE TREND OF THE EFFECTS ON STATIC BALANCE ABILITY

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ABSTRACT

Purpose. The objective of the study was to find out the trend of the effects of 4 varieties of bhasrika pranayama on static balance ability.

Methods. The total of 75 male students were selected as subjects. The age of the subjects ranged 17–25 years. The participants were divided randomly into 5 groups, 15 students each. They practiced 4 varieties of bhasrika pranayama.

Results. Quadratic components for overall trends were found significant in static balance ability. A significant difference was observed between linear components of the trends for the treatment groups and the control group in static balance ability. Also, a significant difference was noted between quadratic components of the trends for the treatment groups and the control group as for static balance ability.

Conclusions. There was a significant difference among the adjusted post-test means of 4 experimental groups and the control group in static balance ability.

Key words: balance ability, bhasrika pranayama, trend analysis

Introduction

Yoga is an ancient system based on philosophical and practical knowledge/concept and a holistic vision of an individual, refined over the ages for the overall development of the body and mind. *Pranayama*, as a part of classical yoga, controls the energy and vital forces (*prana*) within the organism in order to rejuvenate and maintain good health as well as to promote evolution. A yoga practitioner follows the proper patterns¹ of deep breathing that strengthen and revitalize the respiratory system, soothe the nervous system, and reduce distress. Yoga also helps the mind to set calm and become a useful vehicle for concentration and meditation. *Bhasrika pranayama* is one of the 8 main forms of pranayama. Bhasrika is mentioned in the classical yoga texts, *Hathapradipika* and *Gheranda Samhita*. In Sanskrit, it means ‘bellows’ and is related to the following metaphor: ‘A blacksmith blows to create heat and purify iron and bellows is a device for generating

a strong current of air, used to give flow to fire in old times.’ Swami Sivananda describes the bhasrika pranayama practice as a process of rapid inhalation and exhalation with a hissing sound. Except the different practices of simple breathing exercises, the old yogis also explained that different types of deep breathing techniques can have varied effects on both mind and body [1–5]. There are different principles and theories which support the concept that by reducing and controlling their breath, yoga practitioners may improve the physical and mental stability [6–8]. Some studies have reported that yogic practices related to breathing employ voluntarily strong abdominal contractions, which brings stimulation related to somatic and splanchnic receptors, and induces parietal areas of the cerebral cortex, with a suggested effective arousal.

The main goal of the study was to select an appropriate bhasrika version to improve the static balance ability of individuals.

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Material and methods

Participants

The total of 75 male subjects were selected, aged 17–25 years. The participants were randomly divided into 5 different groups, 15 subjects each.

Procedure

The test used to measure static balance ability was the Stork Stand Test. The tester instructed the subject to stand on the dominant leg's foot and to place the other foot's ball on the inner side of the supporting knee. Both hands were to be placed on the sides of the waist. In continuation, the subject was instructed to stand on the foot's ball and raise their heels. On the tester's 'Start' signal, the performer raised the heel from the floor and maintained balance. They maintained the position as long as possible without any movement of the ball of the foot. A stopwatch was started simultaneously with maintaining the balance. When the subject lost balance (by touching a heel to the floor, by moving the foot from the starting position), the tester stopped the stopwatch. The score was recorded in seconds for the duration of the balance maintenance on the ball of foot [9].

The study was conducted with the application of the randomized block design (RBD), specifically a type of RBD named repeated measures design (RMD). The practice of bhastrika pranayama was considered as an independent variable, and static balance ability was accepted as a dependent variable. Different types of bhastrika pranayama practice were referred to as a blocking variable.

As per the objectives of the study (based on repeated measures), 4 types of bhastrika pranayama practices were selected as treatments. These were:

Variety 1 of bhastrika pranayama practice: The first part of this type was similar to *kapalabhati* (another well known yogic breathing practice)², in which both nostrils are used for forceful and quick expulsions of breath that follow one another in rapid succession. Inhalations are passive, brought about by the relaxation of the abdominal muscles [10]. The desired number of exhalations is determined by considering the strength of the individual. In the second part of variety 1, the deepest best possible inhalations are made through both the nostrils. It was desirable that the process of inhalation should last for at least 8 seconds. Then the inspired air was retained by closing the glottis (chin down) and the nostrils (with fingers)³. Exhalation was performed through the left nostril.

Variety 2 of bhastrika pranayama practice: This type is considered in its two sequential parts separately. It started with the first part that corresponds to *kapalabhati*. In the second part, inhalation was always per-

formed through the right side nostril and after retention of breath, exhalations invariably took place through the left nostril [11].

Variety 3 of bhastrika pranayama practice: This type also consists of two different parts, the initial part corresponding to *kapalabhati* performed from a single nostril only (the right side nostril). In the second part, a deep inhalation was carried out through the right side nostril in each odd round and through the left side nostril in each even round. After the retention of breath, the air was always exhaled through the opposite nostril.

Variety 4 of bhastrika pranayama practice: In this type, the first part differs from other bhastrika types. *Kapalabhati* inspiration was performed through the right nostril, while the exhalations took place through the left nostril until fatigue set in. This was followed by attempting the deepest best possible inhalation through the right side nostril, the necessary (as per the experts) retention of breath, and the final exhalation through the left side nostril, which completed the second successive part of that particular round, and also the round itself. After that, the second round started with a quick inhalation through the left side nostril and exhalation through the right side nostril, until fatigue set in. The slow second part started with the left nostril, then a necessary retention followed, and the final exhalation took place through the right nostril, which ended the second round.

Experimental design

The experimental treatment was conducted for 6 weeks, 5 days per week: 30 sessions together, 90-minute each (Table 1). Observations were made after every 2 weeks of treatment.

To study (1) the significant difference among the measures of the subjects' performance (static balance ability) for the 4 selected treatments (the 4 different types of bhastrika pranayama practice), (2) the significant difference among the 4 selected trials as a result of 4 different treatments (the 4 types of bhastrika pranayama practice), (3) the interactional effect between different trials and different treatments, (4) the linear component related to the overall trend, (5) the quadratic component related to the overall trend, (6) the cubic component related to the overall trend, (7) the linear (first) components related to the group versus trial interaction, and (8) the quadratic (second) components related to the group versus trial interaction, the statistical technique named trend analysis with multiple treatments was applied with the significance level of 0.05.

The researchers assumed 5 different objectives:

1. To study the significant difference among the measures of the subjects' performance (static balance ability) for the 4 selected treatments (the 4 different types of bhastrika pranayama practice).

Table 1. The schedule of the experimental treatment with bhastrika pranayama

Weeks	Bhastrika pranayama practice			
	Variety 1	Variety 2	Variety 3	Variety 4
1	Yogic preparatory asanas (5 repetitions × 4 sets) Relaxation asanas	Yogic preparatory asanas (5 repetitions × 4 sets) Relaxation asanas	Yogic preparatory asanas (5 repetitions × 4 sets) Relaxation asanas	Yogic preparatory asanas (5 repetitions × 4 sets) Relaxation asanas
2	Yogic warm-up asanas (8 repetitions × 4 sets) Relaxation asanas	Yogic warm-up asanas (8 repetitions × 4 sets) Relaxation asanas	Yogic warm-up asanas (8 repetitions × 4 sets) Relaxation asanas	Yogic warm-up asanas (8 repetitions × 4 sets) Relaxation asanas
3–6	Yogic warm-up asanas (10 repetitions × 4 sets) Relaxation asanas	Yogic warm-up asanas (10 repetitions × 4 sets) Relaxation asanas	Yogic warm-up asanas (10 repetitions × 4 sets) Relaxation asanas	Yogic warm-up asanas (10 repetitions × 4 sets) Relaxation asanas

2. To study the significant difference among the 4 observed trials as a result of 4 treatments (the 4 types of bhastrika pranayama practice).

3. To study the interactional effect between different trials (3 trials) and different treatments (4 treatments).

4. To study the linear (first) and quadratic (second) components related to the overall (combined) trend.

5. To study the linear (first) and quadratic (second) components related to the groups (treatments) versus trial (observation) interaction.

Ethical approval

The research related to human use has been complied with all the relevant national regulations, institutional policies and in accordance the tenets of the Helsinki Declaration, and has been approved by the authors' institutional review board or equivalent committee.

Results

Table 2 presents the descriptive statistics of static balance ability related to the different trials and treatments. Table 3 shows that the collected data of 5 different groups were normally distributed, since the obtained value of skewness was compared and analysed with twice the value of standard error of skewness (SES), i.e. the observed range from the minus twice SES to plus twice SES. In the case of most values, the value of skewness lay within the required range. The description reveals that the data were not significantly skewed: the values of skewness were considered not violated in the majority of cases.

A similar type of procedure was also applied to study the normal distribution related to kurtosis. The range of normality after multiplying the standard error of kurtosis (SEK) by 2 was set from the minus to

Table 2. The descriptive statistics of static balance ability (in seconds) in relation to 4 different trials and 4 different treatments

Observation	Treatments/practice	<i>n</i>	Mean value	Standard deviation	Minimum value	Maximum value
1	Bhastrika, variety 1	15	24.28	1.32	21.56	26.35
	Bhastrika, variety 2	15	24.89	2.64	18.46	27.58
	Bhastrika, variety 3	15	23.95	1.54	21.92	26.87
	Bhastrika, variety 4	15	23.87	1.16	21.05	26.13
	Control group	15	23.76	2.96	18.92	28.92
	Total	75	120.77	9.64	101.91	135.85
2	Bhastrika, variety 1	15	31.23	4.15	24.95	39.35
	Bhastrika, variety 2	15	29.23	3.16	23.02	33.81
	Bhastrika, variety 3	15	25.04	1.51	22.83	28.30
	Bhastrika, variety 4	15	24.80	1.63	22.32	27.75
	Control group	15	23.54	3.02	18.86	28.90
	Total	75	133.84	13.49	111.98	158.11
3	Bhastrika, variety 1	15	32.32	4.08	27.00	39.57
	Bhastrika, variety 2	15	30.52	3.19	25.62	34.96
	Bhastrika, variety 3	15	26.57	1.02	25.68	29.42
	Bhastrika, variety 4	15	26.49	1.53	24.26	28.44
	Control group	15	23.55	3.08	18.47	28.88
	Total	75	139.45	12.90	121.03	161.27

Table 3. Statistics showing normality of data (static balance ability) in 4 selected varieties of bhastrika pranayama practice and the control group in relation to 3 observations

Measure	BPP-V1	BPP-V2	BPP-V3	BPP-V4	CG
Observation 1					
Skewness	-0.569	-1.325	0.612	-0.575	0.237
SES	0.58	0.58	0.58	0.58	0.58
Kurtosis	-0.266	1.093	-0.587	1.844	-0.473
SEK	1.12	1.12	1.12	1.12	1.12
Observation 2					
Skewness	0.248	-0.657	0.519	0.434	0.385
SES	0.58	0.58	0.58	0.58	0.58
Kurtosis	-0.514	-0.345	0.226	-0.629	-0.578
SEK	1.12	1.12	1.12	1.12	1.12
Observation 3					
Skewness	0.463	-0.297	1.832	-0.020	0.278
SES	0.58	0.58	0.58	0.58	0.58
Kurtosis	-0.749	-1.369	3.504	-1.944	-0.560
SEK	1.12	1.12	1.12	1.12	1.12

BPP – bhastrika pranayama practice, V – variety of BPP, CG – control group, SES – standard error of skewness, SEK – standard error of kurtosis

plus value. The obtained distribution of the scores was found significantly normally distributed in the case of kurtosis in most observed values.

Figure 1 shows the data normality in 4 bhastrika pranayama variety groups and the control group in relation to 3 observations (the total of 15 sets of scores were found). The 15 graphs present the shape of a normal curve. So, the required assumption is fulfilled and a statistical technique from the category of parametric statistics was applied.

Table 4 shows adjusted post-test means and standard errors of 4 varieties of pranayama and the control group.

It was revealed (Table 5) that the obtained *F* value (31.025) was significant since it was higher than the minimum required value of 2.50 with 4, 69 degrees of freedom (*df*) at the 0.05 level of significance. As the *F* value was found statistically significant, the required least significant difference post-hoc test was applied for inter-group (paired) comparisons.

A significant difference (Table 6) was found between varieties 1 and 2 of bhastrika pranayama, varieties 1 and 3 of bhastrika pranayama, varieties 1 and 4 of bhastrika pranayama, variety 1 of bhastrika pranayama and the control group, varieties 2 and 3 of bhastrika pranayama, varieties 2 and 4 of bhastrika pranayama, variety 2 of bhastrika pranayama and the control group, variety 3 of bhastrika pranayama and the control group. In turn, an insignificant difference was observed between varieties 3 and 4 of bhastrika pranayama, and variety 4 of bhastrika pranayama and the control group.

It is evident (Table 7) that the means of the 4 treatments (bhastrika pranayama, variety 1 / bhastrika pranayama, trial 1; bhastrika pranayama, variety 2 / bhastrika pranayama, trial 2; bhastrika pranayama, variety 3 / bhastrika pranayama, trial 3; bhastrika pranayama, variety 4 / bhastrika pranayama, trial 4) and that of the control group differ significantly since the observed *F* value

Table 4. Adjusted post-test means of 4 bhastrika pranayama varieties and the control group in relation to static balance ability

Group	Adjusted mean	Standard error
Bhastrika, variety 1	32.206	0.572
Bhastrika, variety 2	29.894	0.579
Bhastrika, variety 3	26.740	0.572
Bhastrika, variety 4	26.727	0.572
Control group	23.885	0.574

Table 5. The analysis of covariance (ANCOVA) of the comparison of the adjusted post-test means of different groups of bhastrika pranayama and the control group in relation to static balance ability

Value	Sum of squares	Degree of freedom	Mean square	<i>F</i> value	Significance <i>p</i> value
Contrast	607.734	4	151.934	31.025*	< 0.001
Error	337.901	69	4.897		

* significant at the level of 0.05

The *F* value (*F* ratio) was significant at the value of 2.50 with 4, 69 degrees of freedom.

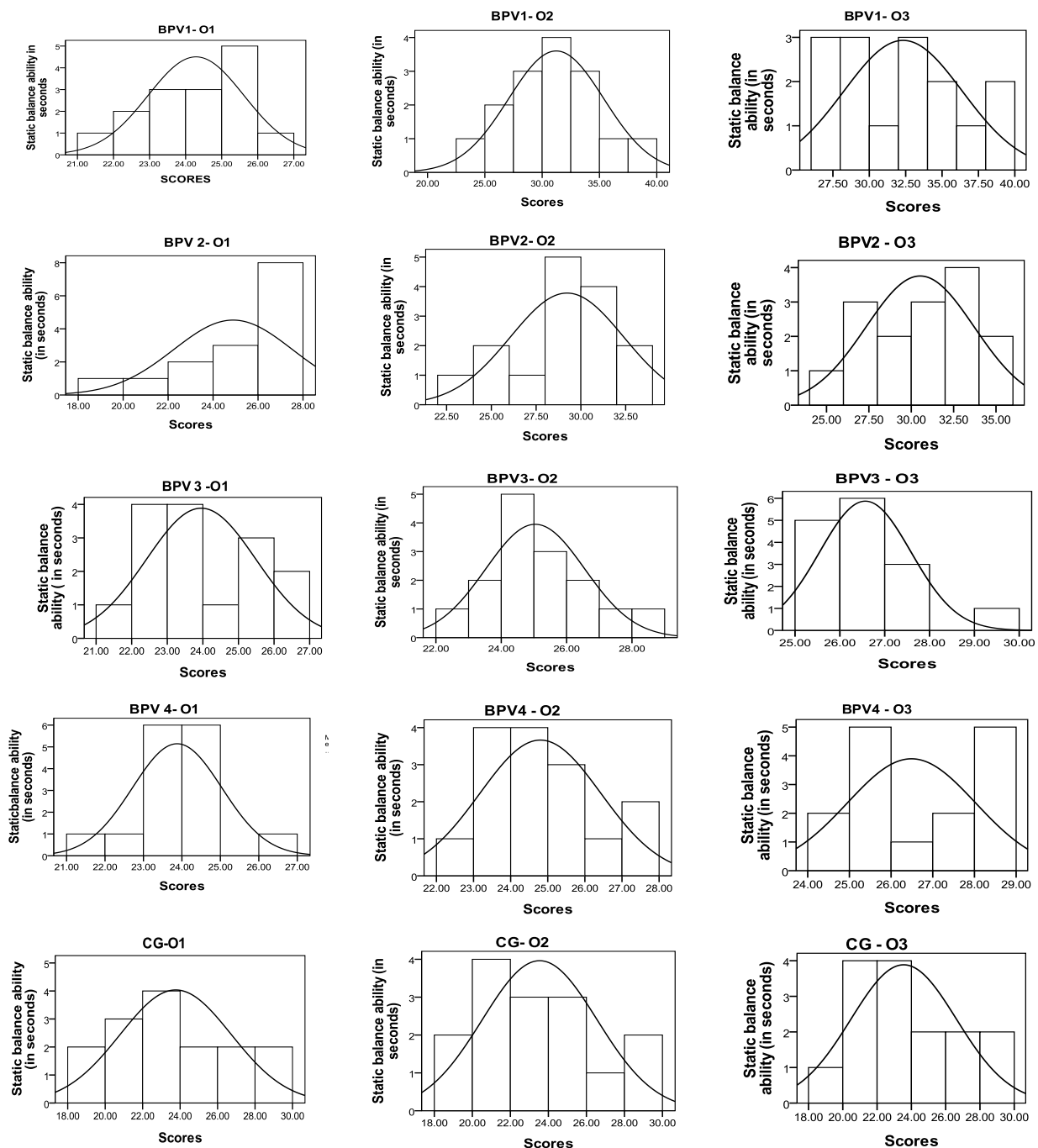


Figure 1. Graphical representation of data normality (static balance ability) in 4 bhastrika pranayama varieties (BPV1, BPV2, BPV3, BPV4) and the control group (CG) in relation to 3 observations (O1, O2, O3)

(F ratio) of 15.125 was higher than the expected required value of 2.50 with 4, 70 df at the 0.05 level of significance.

As depicted in Table 8, the 3 observation means were found highly significant since the F value (F ratio) of 147.90 was greater than the expected required value 3.09 with 2, 140 df at the 0.05 level of significance.

It was observed (Table 9) that the interaction between the observations (trials) and treatments (different bhastrika pranayama practices) was significant

since the observed F value of 25.772 was higher than the expected required value of 2.03 with 8, 140 df at the 0.05 level of significance.

Linear (1st) component related to the overall trend

Table 10 revealed that the linear (1st) component for the overall trend was significant since the calculated F value (F ratio) of 212.991 was higher than the needed value 3.98 with 1, 70 df at the 0.05 level of significance.

Table 6. Least significant difference post-hoc test for the comparison of paired adjusted post-test means of all groups in relation to static balance ability

Variety of bhastrika pranayama practice (A)	Group (B)	Mean difference (A–B)	Significance <i>p</i> value
Bhastrika, variety 1	Bhastrika, variety 2	2.313*	< 0.01
	Bhastrika, variety 3	5.466*	< 0.01
	Bhastrika, variety 4	5.479*	< 0.01
	Control group	8.321*	< 0.01
Bhastrika, variety 2	Bhastrika, variety 3	3.154*	< 0.01
	Bhastrika, variety 4	3.166*	< 0.01
	Control group	6.008*	< 0.01
Bhastrika, variety 3	Bhastrika, variety 4	0.012	> 0.05
	Control group	2.854*	< 0.01
Bhastrika, variety 4	Control group	–1.600	> 0.05

* significant at the level of 0.05

Table 7. Trend analysis (trial means with different treatments). Significant difference among measures of performance (static balance ability) for 4 practices and the control group (significant trend for practices) in static balance ability

Source of variance	Sum of squares	Degree of freedom	Mean square	<i>F</i> value	Significance <i>p</i> value
Treatment (factor)	1012.73	4	253.18	15.125*	< 0.01
Error	1171.76	70	16.73		

* significant at the level of 0.05

The *F* value (*F* ratio) was significant at the value of 2.50 with 4, 70 degrees of freedom.

Table 8. Significant difference between 3 observations. Significant trend for observations in static balance ability

Source of variance	Sum of squares	Degree of freedom	Mean square	<i>F</i> value	Significance <i>p</i> value
Factor 1	551.25	2	275.62	147.90*	< 0.01
Error (factor 1)	260.89	140	1.86		

* significant at the level of 0.05

The *F* value (*F* ratio) was significant at the value of 3.09 with 2, 140 degrees of freedom.

Table 9. Interaction between observations and treatments in static balance ability

Source of variance	Sum of squares	Degree of freedom	Mean square	<i>F</i> value	Significance <i>p</i> value
Factor 1*	384.21	8	48.02*	25.772*	< 0.01
Error (factor 1)	260.89	140	1.86		

* significant at the level of 0.05

The *F* value (*F* ratio) was significant at the value of 2.03 with 8, 140 degrees of freedom.Table 10. Linear (1st) and quadratic (2nd) component for overall (combined) trend in relation to static balance ability

Source of variance	Factor 1	Sum of squares	Degree of freedom	Mean square	<i>F</i> value	Significance <i>p</i> value
Factor 1	Linear	523.48	1	523.48	212.991*	< 0.01
	Quadratic	27.76	1	27.76	21.876*	< 0.01
Error (factor 1)	Linear	172.04	70	2.45		
	Quadratic	88.84	70	1.26		

* significant at the level of 0.05

The *F* value (*F* ratio) was significant at the value of 3.98 with 1, 70 degrees of freedom.

Table 11. Linear (1st) and quadratic (2nd) components of the groups (treatments) and number of observations (trials) interaction; differences among the linear (1st) and quadratic (2nd) components of the trends for the selected treatment groups and the control group in static balance ability

Source of variance	Factor 1	Sum of squares	Degree of freedom	Mean square	F value	Significance p value
Factor 1*	Linear	301.282	4	75.321	30.646*	< 0.01
	Quadratic	82.932	4	20.733	16.335*	< 0.01
Error (factor 1)	Linear	172.046	70	2.458		
	Quadratic	88.848	70	1.269		

* significant at the level of 0.05

The F value (F ratio) was significant at the value of 2.50 with 4, 70 degrees of freedom.

Quadratic (2nd) component related to the overall trend

Table 10 also shows that the quadratic (2nd) component value for the overall trend was significant since the observed F value of 21.876 was higher than the expected required value of 3.98 with 1, 70 df at the 0.05 level of significance.

Linear component

Table 11 presents that the linear (1st) component of the trends for the selected 4 treatment groups (bhastrika pranayama practice groups) and the control group was significant since the observed F value of 30.646 was greater than the required value of 2.50 with 4, 70 df at the 0.05 level of significance.

Quadratic component

Table 11 also illustrates that the quadratic (2nd) component of the trends for the selected 4 treatment groups (bhastrika pranayama practice groups) and the control group was significant since the F value of 16.335 was higher than the required value of 2.50 with 4, 70 df at the 0.05 level of significance.

Discussion

The aim of the present research was to study the 4 varieties of bhastrika pranayama and the static balance ability of the participants. Significant differences were found between the adjusted post-test means of 4 treatment groups (bhastrika pranayama practice groups) and the control group in static balance ability. In the available literature, there are examples of similar outcomes [12]. According to some research [3], static balance ability was measured by the Stork Stand Test, and dynamic balance ability was determined by the Star Excursion Balance Test and simple reaction time. The results show that the experimental group presented a significant improvement in static balance, dynamic balance, and simple reaction time ($p < 0.001$). Yoga pra-

nayama practices could lead to an increase in static and dynamic balance. The effects of 6 weeks of yoga training on selected variables of static as well as dynamic balance were measured by Shashikala et al. [13]. Probably, it is also a side effect of raising the ability of concentration and an increased level of self-awareness. After 3 months of regular practice, pranayama techniques like bhastrika pranayama may cause a shift of the autonomic nervous control toward the parasympathetic side, which improves mental concentration, and decreases blood pressure and heart rate [14–20]. In a pilot study in which a 12-week yoga intervention among old age adults was performed to test if fear of falling would decrease as well as body balance would improve, static balance raised by 4% ($p = 0.045$). The yoga practice included breathing exercises (pranayama) [6, 21]. In another experiment, carried out by Santanella et al. [22], yoga practitioners were randomized into 4 month-long training programmes for 2 groups: respiratory exercises (yoga group, experimental, $n = 15$) and the stretching group (control, $n = 14$). The researchers concluded that respiratory yoga related to bhastrika practice might be useful for the healthy group by improving the respiratory function as well as the sympathovagal balance.

Generally, slow pace practice of bhastrika pranayama involves the respiratory rate of ca. 6/minute. This shows a significant tendency to improve the autonomic nervous system by enhancing the activation of the parasympathetic system [22, 23]. Research also shows that one cannot improve the static stability. In yoga, some problems with stability are associated with hemispheric and autonomic imbalance. From the traditional point of view, in males, spatial performance is better during right side nostril breathing and verbal performance is better during left side nostril breathing [1, 24–26]. In the case of females, spatial performance is found better during the left side nostril breathing. Another explanation offered by yoga is related to emotions and moods. Emotions and breath remain in a deep relationship both in yoga and in western psychology [27].

The pranayama type of breathing can synchronize autonomic and metabolic functions, reinforce mind

stability, mental concentration, and inherent cardiovascular rhythms, as well as modify baroreflex sensitivity [28, 29]. These goals may be attained by practising pranayama, in which a particular pattern of breathing correlates with the activity phase of the basic rest activity cycle.

Conclusions

1. A significant difference was observed among the adjusted post-test means of 4 selected experimental groups and the control group in static balance ability since the observed *F* value (*F* ratio) of 31.025 was found significant at the 0.05 level with 4, 69 *df*.

2. A significant difference was found between varieties 1 and 2 of bhastrika pranayama, varieties 1 and 3 of bhastrika pranayama, varieties 1 and 4 of bhastrika pranayama, variety 1 of bhastrika pranayama and the control group, varieties 2 and 3 of bhastrika pranayama, varieties 2 and 4 of bhastrika pranayama, variety 2 of bhastrika pranayama and the control group, variety 3 of bhastrika pranayama and the control group.

3. A significant difference was seen among measures of static balance ability for different treatments and the control group (significant trend for all treatments) since the *F* value of 15.125 was observed significant at the 0.05 level with 4, 70 *df*.

4. A significant difference was observed between different measures of static balance ability for the treatments and the control group (significant trend for observations) since the observed *F* value (*F* ratio) of 147.90 was found significant at the 0.05 level with 2, 140 *df*.

5. The interactional effect between trials (observations) and the treatments (bhastrika pranayama practices) was also found significant in static balance ability since the *F* value of 25.77 was significant at the 0.05 level the 8, 140 *df*.

6. The linear (1st) components for the overall trends were found significant in static balance ability since the *F* value (212.991) was significant at the 0.05 level with 1, 70 *df*.

7. The quadratic (2nd) components for the overall trends were also significant in static balance ability since the *F* value (21.876) was significant at the 0.05 level with 1, 70 *df*.

8. A significant difference was also observed between the linear (1st) components of the trends for selected treatment groups (bhastrika pranayama practices) and the control group in static balance ability since the *F* value (30.646) was significant at the 0.05 level the 4, 70 *df*.

9. A significant difference was detected, too, between the quadratic (2nd) components related to the trends for different treatment groups (bhastrika pranayama practices) and the control group in static balance ability since the *F* value (16.335) was significant at the 0.05 level with 4, 70 *df*.

Disclosure statement

No author has any financial interest or received any financial benefit from this research.

Conflict of interest

Authors state no conflict of interest.

Endnotes

- 1 It refers to a particular pattern of breath control with 3 phases: *pūrak* (to take the breath inside), *kumbhak* (to retain it), and *rechak* (to discharge it).
- 2 This is a yogic system of body cleansing technique; it involves short, forceful, and active exhalations while inhalations happen automatically in a passive way.
- 3 This practice in yoga is named *jalandhara bandha* (extending the neck and elevating the sternum before dropping the head so that the chin may rest on the chest).

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Glossary

1. Trend analysis: method to find out change in dependent variable with respect to specific time intervals.
2. Linear trend: change from initial observation to 1st trial.
3. Quadratic trend: change from 1st trial to 2nd trial.
4. Cubic trend: change from 2nd trial to 3rd trial.
5. Randomized block design: a variation of complete randomized design in which 'varieties of bhastrika pranayama' were considered as a blocking variable.
6. Bhastrika pranayama: it is described/characterized by incessant and very quick exhalations of breath in all its selected varieties/types, that is imitating a similar type of actively hissing bellows of a smith from a village.
7. Static balance: it may be defined as one's ability to hold a stationary position for a reasonably long duration in comparatively less stable positions.
8. Kapalbhata: a purification exercise of breathing in which expulsion is active and inhalation is passive.