



An Analysis on the Innovations between Physical Exercise Group and Yoga Group with Flamingo Balance and Standing Broad Jump Test

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Abstract: Yoga is a multifaceted spiritual tool with enhanced health and well-being as one of its positive effects. The components of yoga which are very commonly applied for health benefits are asanas (physical postures), pranayama (regulated breathing) and meditation. In this article we have discussed about the Standing Broad Jump test, Flamingo Balance Test, innovations between physical exercise group and yoga group.

Keywords: yoga, physical exercise, flamingo balance, standing broad jump test, health benefits

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INTRODUCTION

Physical fitness is the ability of a person's body to carry out routine everyday activities without becoming weary or fatigued, as well as having sufficient reserves of strength and energy to meet any unexpected demands imposed on him. People from all walks of life have become less physically fit as a result of modernization and urbanization. As a result, physical fitness has declined over time as a result of a lack of physical activity. Humans will have to return to their previous ways in order to regain their physical condition. In order for the development of a healthy personality in student, they must have access to a wide range of activities that allow them to grow in a variety of ways. As a result, it is critical that schools provide a comprehensive physical education curriculum.

Humans have always engaged in physical exercise and mobility. When it came to the battle for survival and for greatness, it played a variety of roles. Fundamental motor skills are honed via the variety of movement patterns used in this role-playing game, which may include anything from basic survival abilities to leisure pleasures to conquering the unconquerable and honing athletic prowess.

LITERATURE REVIEW

Julia Frank, Rico Schroeder, Bernd Gruhn, (2020) Yoga's potential impact on young people's autonomic control is being investigated in the present research by assessing heart rate variability (HRV). This is a non-randomized, two-arm exploratory pilot study in which there is an active control group. Traditional school sports were compared to a 10-week yoga programme (90 minutes once a week) for a group of 14 healthy young people who participated in the programme (90 min once a week over 10

weeks). 24-hour electrocardiograms (ECGs) were taken at the beginning and at the end of the 10-week intervention. HRV parameters were calculated from 20-minute nocturnal sleep sessions using linear (time and frequency domain) and nonlinear dynamics. Analyses of variance (ANOVA) and posthoc t-tests (assessing statistical significance and effect size) were used to compare the two groups' pre- and post-intervention results. The statistical assessment of the interaction effects for the individual nocturnal HRV values found no significant group and time interaction. For the most part, all of the indices showed medium or large temporal effects. According to the yoga group's increased significance and bigger effect sizes, the HRV index improvements were more dramatic than in the control group after the intervention.

Jiban Boruah (2019) This change in human health is based on preserving wellness rather than treating illness, yet yoga's allure as a way to keep people healthy is generally acknowledged. Even before Indian Prime Minister Narendra Modi's appeal to international bodies for an International Yoga Day, the international community was already aware of the benefits of yoga as a holistic health care method - and International Yoga Day has only given them an opportunity to share what they consider the best among currently existing health care practises. Despite the widespread acceptance of the benefits of yoga in terms of health restoration and the promotion of human values, there have been no significant initiatives to include the practise into official school curriculum. Yoga's international popularity may be founded only on people's belief in its benefits, or it may have scientific/experimental support. On the basis of India's role as the birthplace of yoga and its natural desire to study it in that country, the authors also aim to imagine the future of yoga education, especially in India.

MATERIAL AND METHODS

It is a two-arm randomized clinical experiment. For a period of two months, schools has been given the option of implementing either a yoga intervention or physical training, at random. A total of 24 schools has been considered for the research, and a random sample of 80 students from each school has been chosen at random. A total of 800 students has been included in the study after ten schools in four taluks of two districts were chosen. There were 400 students in the Yoga group and 400 students in the physical activity group who participated in the study's research sample. In this investigation, the sample size was determined using a 95 percent power and a 0.05 alpha level to compute the sample size. Each arm of the research needed 335 participants.

RESULTS

Statistical Packages for Social Sciences (SPSS) version 18.0 was used to examine the data. Data were analyzed using both descriptive and inferential statistics. The data were determined to be normally distributed, thus a "parametric independent samples t test" was performed on the change in score between groups after the intervention. The data were analyzed using the intention to treat principle by replacing the missing values with their corresponding group mean average. Alpha of 0.05 was deemed significant. The "paired samples t-test" was used to do the group analysis inside the group. we have discussed about the Standing Broad Jump test, Flamingo Balance Test, innovations between physical exercise group and yoga group.

1. Standing Broad Jump (SBJ)

Standing broad jump (SBJ) improved significantly among both yoga ($t=-5.8$, $p=0.00$) and exercise groups ($t=0.91$, $p=0.36$) after the intervention period. According to $t=-1.52$, $p<0.13$, there was no difference between the yoga and physical groups in SBJ.

2. Flamingo Balance Test (FBT)

Both the yoga ($t=6.92$, $p<0.00$) and physical activity ($t=5.2$, $p=0.001$) groups had substantial improvements in the Flamingo Balance Test.

The situation did not, however, significantly alter. The Flamingo Balance Test ($t=1.1$, $p=0.281$) $t=2.34$, $p=0.04$, 95 percent CI 0.23 to 1.3, for yoga and physical activity groups. Table shows)

Table 1: In Yoga and Physical Exercise Groups, participants' SBJ and FBT performance was compared

SBJ and FBT mean and SD for YOGA and PA Group						
Group	SBJ			FBT		
	Pre	Post	Δ pre-post	Pre	Post	Δ pre-post
PA (n=400)	4.95 \pm 6.95	4.64 \pm 1.15	0.32 \pm 7	11.03 \pm 6.2	9.43 \pm 5.73 ***	1.60 \pm 6.11
YOGA (n=400)	4.53 \pm 0.971	4.75 \pm 0.91 ***	-0.21 \pm 0.8	10.18 \pm 6	8.12 \pm 4.51 ***	2.07 \pm 6.1
Total (n=800)	4.74 \pm 4.90	4.69 \pm 1.03	0.04 \pm 4.90	10.60 \pm 6.1	8.76 \pm 5.2	1.84 \pm 1
Within Groups: *** $p<0.001$						
Between Groups: SBJ-standing broad jump, FBT-flamingo balance test $t=2.34$, $p=0.04$, 95%CI 0.23 to 1.3						

Table 2: The following are the results for samples that were substituted in the SBJ variable

Result Variables						
YOGA=1, PA=0		Result Variable	N of Replaced Missing Values	Case Number of Non-Missing Values		Creating Function
				First	Last	
0	1	SBJ CHNPO_1	59	1	400	SMEAN (SBJCHNPO)
1	1	SBJ CHNPO_1	78	400	800	SMEAN (SBJCHNPO)

Table 3: The following are the results for samples that were substituted in the SBJ variable

Result Variables						
YOGA=1, PA=0		Result Variable	N of Replaced Missing Values	Case Number of Non-Missing Values		Creating Function
				First	Last	
0	1	SBJ CHN_1	60	1	400	SMEAN (SBJCHN)
1	1	SBJ CHN_1	89	400	800	SMEAN (SBJCHN)

Table 4: The following are the results for samples that were substituted in the FBT variable

Result Variables						
YOGA=1, PA=0		Result Variable	N of Replaced Missing Values	Case Number of Non-Missing Values		Creating Function
				First	Last	
0	1	FBTpos_1	88	1	400	SMEAN (FBTpos)
1	1	FBTpos_1	205	400	800	SMEAN (FBTpos)

Table 5: The following are the results for samples that were substituted in the FBT variable

Result Variables							
YOGA=1,PA=0		Result Variable	N of Replaced Missing Values	Case Number of Non-Missing Values		N of Valid Cases	Creating Function
				First	Last		
0	1	fbtchn_1	91	1	400	400	SMEAN (fbt chn)
1	1	fbtchn_1	209	400	800	400	SMEAN (fbt chn)

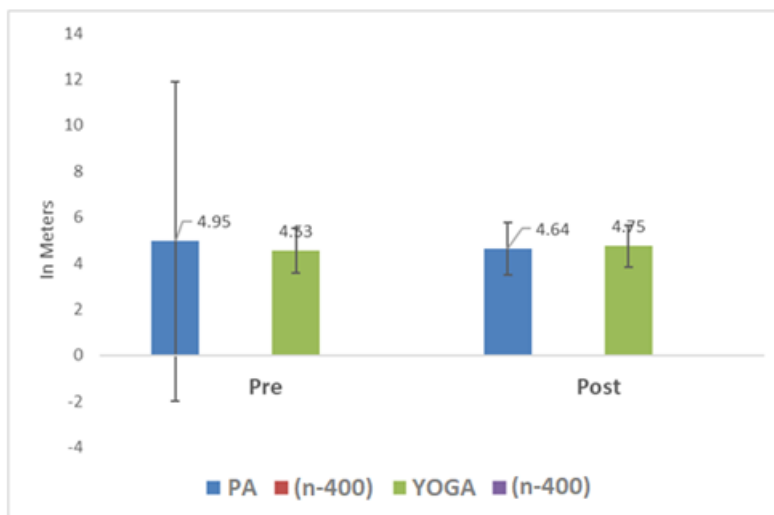


Figure 1: Standing Broad Jump Before and After and After Yoga and Physical Activity Interventions Comparative Analysis

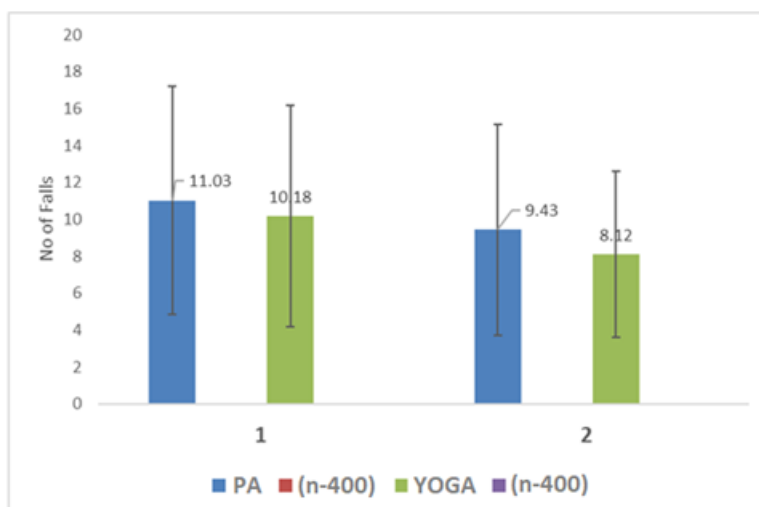


Figure 2: The number of falls on the Flamingo balance is compared. Tests conducted before and after the addition of yoga and physical activity

3. Innovations between Physical Exercise Group and Yoga Group

Sit and Reach Test (SR)

Both the yoga ($t = -9.4$; $p < 0.00$) and physical activity ($t = -4.01$; $p < 0.00$) groups had an increase in their Sit and Reach.

Yoga and physical activity groups showed no significant difference in Sit and Reach. ($t = -3.4$, $p < 0.001$)

$t=2.34$, $p=0.04$, 95% CI 0.23 to 1.3.

Hand Grip Test (HGT)

Yoga and physical training groups both had a substantial improvement in Hand grip strength ($t= -4.2$, $p<0.001$)

There was a dramatic shift. Yoga and physical activity groups differ in the strength of their hand grips. ($t= -1.12$, $p< 0.001$) $t=2.34$, $p=0.04$, 95% CI 0.23 to 1.3.

Back Leg Dynamometer (BLD)

Yoga and physical activity groups both had a substantial increase in Back Leg Dynamometer scores ($t= -7.5$, $p<0.001$)

The Back Leg Dynamometer did not differ significantly between the yoga and physical activity groups. ($t=-1.3$, $p=0.207$) $t=2.34$, $p=0.04$, 95% CI 0.23 to 1.3.

Table 6: The Sit and Reach Test, Hand grip and rear leg dynamometer were used to compare the performance of participants

SR, HG and BLD mean and SD for YOGA and PA Group									
Group	SR			HGT			BLD		
	Pre	Post	Δ pre-post	Pre	Post	Δ pre-post	Pre	Post	Δ pre-post
PA (n=400)	26.62 \pm 4.90	27.47 \pm 4.63	-0.85 \pm 4.20 ***	19.80 \pm 5.4	20.32 \pm 5.15 ***	-0.52 \pm 3.2	41.41 \pm 14	45.33 \pm 13.5 ***	-3.93 \pm 10.13
Yoga (n=400)	26.42 \pm 5.3	28.25 \pm 5.1	-1.83 \pm 3.95 ***	20.74 \pm 5.34 ***	21.54 \pm 4.9 ***	-0.80 \pm 3.9	42.57 \pm 15.04	47.56 \pm 17.4 ***	-4.99 \pm 13.5
Total (n=800)	26.51 \pm 5.10	27.87 \pm 4.9	-1.35 \pm 4.10	20.28 \pm 5.4	20.94 \pm 5.05	-0.66 \pm 3.6	42.00 \pm 14.53	46.47 \pm 15.62	-4.47 \pm 12

Within Groups: *** $p\leq 0.001$, Δ pre-post difference,
Between Groups: ††† $p\leq 0.001$, Yoga and PA-physical activity Group SR-sit & reach test, BLD-back & leg dynamometer scores, HGT-hand grip dynamometer test $t=2.34$, $p=0.04$, 95% CI 0.23 to 1.3.

Table 7: HGT variable results for samples that were replaced

Result Variables						
YOGA=1, PA=0		Result Variable	N of Replaced Missing Values	Case Number of Non-Missing Values		N of Valid Cases
				First	Last	
0	1	HG MNPOS_1	70	1	400	400
1	1	HG MNPOS_1	100	400	800	400

Table 8: HGT variable results for samples that were replaced

Result Variables						
YOGA=1, PA=0		Result Variable	N of Replaced Missing Values	Case Number of Non-Missing Values		N of Valid Cases
				First	Last	
0	1	HG CHN_1	71	1	400	400
1	1	HG CHN_1	110	400	800	400

Table 9: HGT variable results for samples that were replaced

Result Variables							
YOGA=1, PA=0		Result Variable	N of Replaced Missing Values	Case Number of Non-Missing Values		N of Valid Cases	Creating Function
				First	Last		
0	1	HG MNPOS_1	70	1	400	400	SMEAN(HG MNPOS)
1	1	HG MNPOS_1	100	400	800	400	SMEAN (HG MNPOS)

Table 10: BLD variable results for samples that were replaced

Result Variables							
YOGA=1, PA=0		Result Variable	N of Replaced Missing Values	Case Number of Non-Missing Values		N of Valid Cases	Creating Function
				First	Last		
0	1	BLD MNPOS_1	77	1	400	400	SMEAN (BLD MNPOS)
1	1	BLD MNPOS_1	95	400	800	400	SMEAN (BLD MNPOS)

Table 11: BLD variable results for samples that were replaced

Result Variables							
YOGA=1, PA=0		Result Variable	N of Replaced Missing Values	Case Number of Non-Missing Values		N of Valid Cases	Creating Function
				First	Last		
0	1	BLD CHN_1	77	1	400	400	SMEAN (BLD CHN)
1	1	BLD CHN_1	96	400	800	400	SMEAN (BLD CHN)

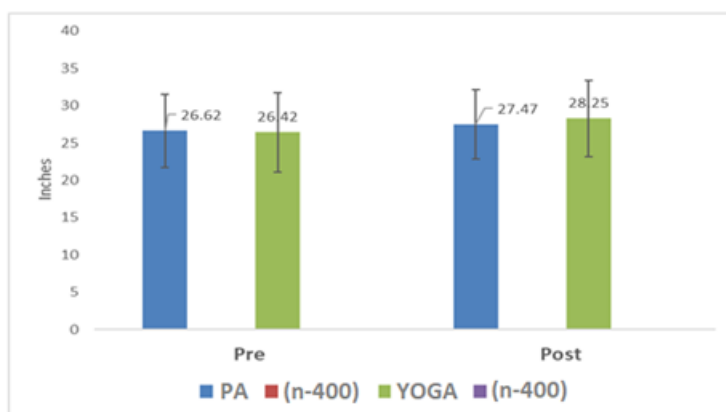


Figure 3: Comparison of forward flexion on the Sit and Reach test before and after Physical activity and Yoga intervention

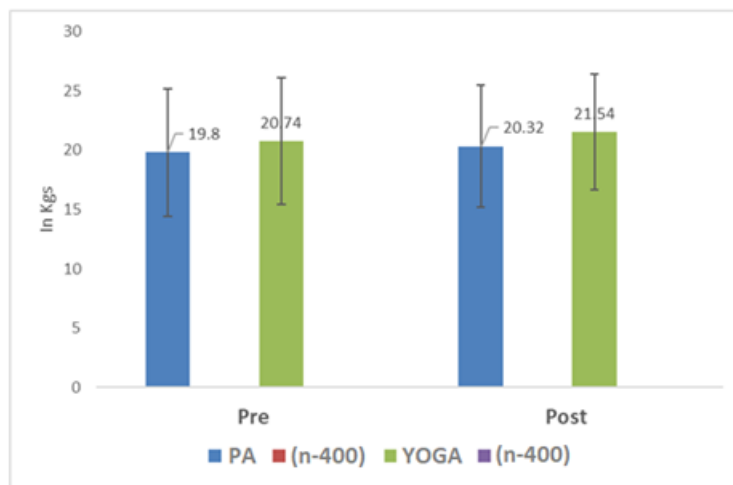


Figure 4: Comparison of Hand Grip Strength before and after Physical exercise and Yoga intervention

DISCUSSION

Improvements in executive function and memory are modestly related with moderate increases in aerobic capacity and aerobic training, according to meta-analyses, although the benefits of exercise on working memory are less consistent. As with other meta-analytic evaluations, this one shows a wide range of neuro-cognitive function connected with aerobic exercise, as well as moderate to modest advances in cognitive function.

Obesity and inactivity throughout childhood have been linked to diabetes development. Adult health and well-being have been linked to childhood physical exercise, in part due to the establishment and maintenance of healthy habits. Studies have shown that children with ADHD and asthma may benefit from regular physical activity. Results from this research support our previous findings that regular physical activity and yoga might help enhance aerobic capacity and cognitive function.

CONCLUSION

Yoga has deep roots in our Vedic writings and is an effective tool for passing on moral and social ideals to the next generation. Yoga is a great way to fight laziness and inattention that affect learning, and it also helps develop personalities and increase performance. In order to raise the standard of education across the nation, this module may be adopted in both public and private institutions alike.

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