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Research Article

Comparative Study Of Three Different Yoga Art Forms On Attitude Towards Yoga Amongst Adolescents

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ABSTRACT

Yoga is more than just physical exercises; it involves a holistic approach to harmonizing the body, mind, and spirit. The study aimed to explore how different yoga practices – asana (postures), pranayama (breathing exercises), and power yoga (a more dynamic form) – might influence students' attitudes towards yoga. Lawshe method was used to establish the content validity of the three yoga protocols. The current study's total sample consisted of 116 male students (mean age, 14.28 ± 1.32). Using a random sampling technique, data was collected from students residing and studying in Delhi, NCR. For data collection, Mahesh Kumar Muchhal's Yoga Attitude Scale (YAS– M) was used. The data was statistically treated using the Mean, SD, and ANCOVA test. The study's findings indicated that the students who practiced power yoga (M = 45.88) developed a significantly high attitude towards yoga as compared to those who practiced asana only (M = 42.30), and Pranayama only (M = 42.75) after accounting for pre-intervention yoga attitude scores. There was no significant change in the yoga attitude of the asana only and pranayama only groups. Partial eta squared value showed that 43% of the total variance in yoga attitude scores was accounted for by the three types of yoga protocols controlling for the effect of the students' pre intervention yoga attitude scores. The researchers concluded that the type of yoga practice plays a crucial role in shaping an individual's attitude towards yoga. Power yoga, with its dynamic and intense nature, seemed to have a more profound impact on the students' attitudes compared to the more traditional practices of asanas and pranayama alone. This study highlights the importance of considering various yoga styles and their potential effects on individuals' perceptions and attitudes towards this ancient practice. It suggests that a more vigorous and engaging form of yoga, such as power yoga, may be particularly effective in fostering a positive attitude towards yoga among younger practitioners.

Keywords: Yoga, Attitude, Power Yoga, ANCOVA, Lawshe Method

I. Introduction:

Yoga, as a holistic practice, offers numerous benefits for physical, mental, and emotional well-being across all age groups. Among the various populations studied in yoga research, school-aged children represent a significant demographic worthy of further investigation. Exploring the attitudes and perceptions of this group towards yoga can provide valuable insights to inform the development and implementation of yoga-based interventions within educational settings.

Extensive research has demonstrated the positive impacts of yoga on the physical and psychological health of children and adolescents. Regular yoga practice has been associated with improvements in flexibility,

strength, balance, cardiovascular fitness, stress reduction, anxiety and depression management, self-regulation, attention, and emotional intelligence among school-aged individuals (Zamanzadeh, V. et al., 2015). Consequently, there has been a growing interest in integrating yoga into school curricula and after-school programs.

However, the success of such initiatives largely hinges on the attitudes and receptivity of the target population – the students themselves. Understanding the perceptions, beliefs, and experiences of school children with yoga is crucial for designing effective and engaging yoga programs that resonate with this age group. Factors such as prior exposure, perceived benefits, and personal preferences can influence a child's attitude towards yoga.

Previous research on school children's attitudes towards yoga has yielded mixed findings. While some studies report overwhelmingly positive attitudes, with students expressing enjoyment, perceived benefits, and a desire to continue practicing yoga, others reveal more ambivalent or negative attitudes stemming from factors such as discomfort with unfamiliar postures, cultural or religious concerns, or perceived lack of relevance.

Notably, these attitudes may vary based on individual characteristics such as age, gender, socioeconomic status, and cultural background. Younger children may be more open and receptive, while older students may be more self-conscious or resistant. Social and cultural norms can also shape a child's comfort level and willingness to engage with yoga.

To address these gaps, further research is needed to comprehensively examine the attitudes of school children towards yoga and the factors that influence these attitudes. By gaining a deeper understanding of students' perceptions, beliefs, and experiences, researchers and educators can develop more effective strategies for integrating yoga into educational settings in a way that resonates with and benefits this important population.

Ultimately, understanding the attitudes of school children towards yoga is a crucial step in promoting the widespread adoption and sustainability of yoga-based interventions in educational contexts. Through a deeper understanding of students' perspectives, researchers and educators can design and implement yoga programs that are engaging, culturally relevant, and aligned with the needs and preferences of this demographic.

II. Methodology:

- **Developing the yoga protocols:**

Table-1: Detailed yoga protocols for the three groups.

Group-1: Asana protocol	Group-2: Pranayama protocol	Group-3: Power Yoga protocol
Only 10 yoga-derived postures have been proposed for the group. Short breaks of 15 to 20 seconds to ensure mindful practice. Yoga postures to be performed in slow dynamics, but always practice in vinyāsa, the yoga method in which the movement is accompanied and is synchronous with the breath. The movement flows with breath and increases in intensity with breath. Keep each position for at least 20 seconds. Follow the same sequence as taught. The yoga derived āsana/kriyas are:- Grivāsanchalan (Neck rolls)-standing Pranamāsana (Prayer Pose)-standing Tadasana (standing and stretching upwards with legs joined together) Tiryaka Tadasana (stretching arms upwards with legs shoulder width apart and sideways bending) Kati-chakrasana (legs shoulder width	Only 10 yoga-derived pranayamas have been proposed for the group. Short breaks of 15 to 20 seconds to ensure mindful practice. Following yoga derived pranayama sequence to be followed: Preparatory pranayama General breathing (15 repetitions) Two-part breathing with hands forward and backwards (5 repetitions) Forceful breathing Bhastrika (40 repetitions) Kapalbhati (100 repetitions) Limits of breath Suryabhedi Chandrabhedi Calming pranayama Sheetali (tongue roll) Seetakari	Only 10 yoga-derived dynamic yoga postures have been proposed for the group. Short breaks of 15 to 20 seconds to ensure mindful practice. Following yoga derived sequence to be followed with varied repetitions of 3 sets each pose: Sukshma vyayama (warming up) Suryanamaskara (sun salutation) –12 repetitions, 5 sets Virabhadrasana (warrior poses)-I, II, and II Cat cow stretch (Chakravakasan) Gtayatmak meru vakrasana (Dynamic

apart and twisting) Parvatasana (mountain pose) Bhujangasana Meru-vakrasana (seated) Supta vajrasana Shashankasana Notes: Total duration = 45 minutes) Start with a 2 minute “Om” or “Hmm” chanting as suitable. End with 5 minutes of relaxation in shavasana	Meditative pranayama Anulom vilom Bhramari Notes: Total duration = 45 minutes) Start with a 2 minute “Om” or “Hmm” chanting as suitable. End with 5 minutes of relaxation in shavasana	twisting) Plank Pose (Phalakasana) Kavva chalan asana (crow walk) Singha garjanasana (lion pose) Notes: Total duration = 45 minutes) Start with a 2 minute “Om” or “Hmm” chanting as suitable. End with 5 minutes of relaxation in shavasana

Lawshe's (Lawshe, C. H., 1975) content validity method was used to quantify the content validity of the above 3 yoga protocols. The key steps and outcomes of this method were as follows:

1. Subject matter experts (SMEs) were asked to evaluate each item in the three yoga protocols and indicate whether the item is "essential", "useful but not essential", or "not necessary" for the construct being measured (Romero Jeldres M. et al., 2023)
2. The Content Validity Ratio (CVR) was calculated for each item, which represents the degree of agreement among the SMEs on the essentiality of the item. The CVR ranges from -1 to +1, with a higher value indicating greater content validity (Colin A. and Andrew John S., 2013)
3. The Content Validity Index (CVI) was then calculated as the average of the CVR values across all the items of the 3 yoga protocols. The CVI provides an overall measure of content validity, with a higher CVI indicating greater content validity of the instrument (each yoga protocol) as a whole.
4. Generally, a CVR value greater than 0.6 is considered acceptable, and a CVI value greater than 0.78 is considered to indicate good content validity (Y Yudiana et al 2017). For Asana only protocol, the CVR was found to be 0.75 and for CVI the value was 0.80. For Pranayama only protocol, the CVR was found to be 0.79 and for CVI the value was 0.84. For power yoga protocol, the CVR was found to be 0.65 and for CVI the value was 0.79.
5. The content validity of the was further evaluated and supported by their respective face validity by a team of experts.

In the nutshell, the outcome of Lawshe method for the CVR and CVI values, guided the selection and refinement of yoga protocol items and provided evidence of the instrument's content validity.
The above yoga protocols were implemented for 4 weeks (3 days a week) amongst the 116 male students of various Delhi schools.

Objectives:

1. To study the level of attitude of adolescents towards yoga.
2. To study the differences between pre yoga intervention yoga attitude and post intervention yoga attitudes.
3. To compare the yoga attitude scores of three groups namely; asana only, pranayama only and power yoga only while controlling for pre -intervention scores.

Hypothesis:

1. H_0 = all variances are equal with variations across the factor levels
2. H_0 = all the 3 yoga protocols will have same effect of the attitude towards yoga post their respective yoga protocols
3. H_0 = all the 3 yoga protocols will have high attitude towards yoga post their respective interventions

III. Results and discussion:

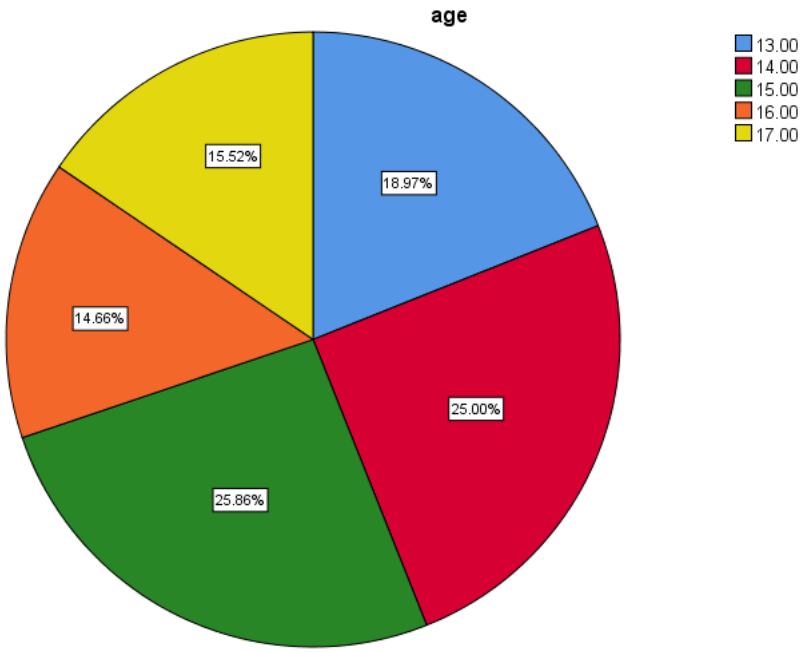
Table-2: Total age statistics of (N=116) male participants

Mean	14.8276
Std. Deviation	1.32715
Minimum	13.00
Maximum	17.00

Table-3: Groupwise frequency distribution

		Frequency	Percent
Valid	Asana only	38	32.8
	Pranayama only	42	36.2
	Power Yoga	36	31.0
	Total	116	100.0

Fig-1: Pie Chart



A one-way analysis of covariance (ANCOVA) was conducted for the present study. The independent variable, type of yoga protocol, included three groups: asana only, pranayama only, and power yoga group. The dependent variable was the post-intervention students' attitude towards yoga scores and the covariate was the students' pre-intervention score on attitude towards yoga.
Below are the unadjusted means for post intervention attitude towards yoga for the three groups:

Table-4: Descriptive Statistics

Dependent Variable: Post Intervention Attitude towards Yoga

Group	Mean	Std. Deviation	N
Asana only	42.3684	1.71513	38
Pranayama only	42.6190	1.93747	42
Power Yoga	45.9444	1.85078	36
Total	43.5690	2.42890	116

Table-6: Categorization of Yoga Attitude on the basis of obtained scores of the subjects as per Dr. MK Muchhal, 2009.

Sl. No.	Scores	Percentage	Yoga Attitude Group
	0-12	Up to 20%	Very Low Yoga Attitude
	13-24	Up to 40%	Low Yoga Attitude
	25-36	Up to 60%	Average Yoga Attitude
	37-48	Up to 80%	High Yoga Attitude
	49-60	Up to 100%	Very High Yoga Attitude

Table-7 output shows that the underlying assumption of homogeneity of variance for the one-way ANCOVA has been met – as evidenced by $F(2, 113) = 1.358$, $p = .261$. That is, p (.348) > α (.05).

Table-7: Levene's Test of Equality of Error Variances[a]

Dependent Variable: Post Intervention Attitude towards Yoga

F	df1	df2	Sig.
1.358	2	113	.261

Tests the null hypothesis that the error variance of the dependent variable is equal across groups.

a. Design: Intercept + Pre Intervention Attitude towards Yoga + Group

Above table shows the Levene's test of equality of error variances is not significant, thus we accept the first null hypothesis and we can assume that the variances are equal. Since, this meets the ANOVA assumption, we can now proceed with the ANCOVA analysis.

Table-8: Tests of Between-Subjects Effects

Dependent Variable: Post Intervention Attitude towards Yoga

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	313.359[a]	5	62.672	18.883	.000
Intercept	1428.110	1	1428.110	430.284	.000
Group	8.129	2	4.064	1.225	.298
Pre Intervention Attitude towards Yoga	13.739	1	13.739	4.139	.044
Group * Pre Intervention Attitude towards Yoga	1.593	2	.797	.240	.787
Error	365.089	110	3.319		
Total	220876.000	116			
Corrected Total	678.448	115			

a. R Squared = .462 (Adjusted R Squared = .437)

Before conducting an ANCOVA – the homogeneity-of-regression (slope) assumption was also tested. The test evaluates the interaction between the covariate (pre-intervention scores) and the factor (type of yoga protocol) in the prediction of the post -intervention yoga attitude scores. In table-8: The interaction source is labeled Group * Pre Intervention Attitude towards Yoga. Our results suggest the interaction is not significant, $F(2, 110) = .240$, $p = .787$. That is, p (.787) >, α (.05). Based on this finding, we can proceed with our ANCOVA analysis.

A preliminary analysis evaluating the homogeneity-of-regression (slopes) assumption indicated that the relationship between the covariate and the dependent variable did not differ significantly as a function of the independent variable, $F(2, 110) = ..24$, $p = .787$.

Table-9: Tests of Between-Subjects Effects

Dependent Variable: Post Intervention Attitude towards Yoga

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	311.765[a]	3	103.922	31.742	.000	.460
Intercept	1822.237	1	1822.237	556.586	.000	.832
Pre Intervention Attitude towards Yoga	15.953	1	15.953	4.873	.029	.042
Group	281.302	2	140.651	42.961	.000	.434
Error	366.683	112	3.274			
Total	220876.000	116				
Corrected Total	678.448	115				

a. R Squared = .460 (Adjusted R Squared = .445)

The ANCOVA (Table-9) was significant, $F(2, 112) = 42.96$, $p < .05$. As also 43% ($w^2 = .434$) of the total variance in yoga attitude scores was accounted for by the three types of yoga protocols controlling for the effect of the students' pre intervention test scores.

It was observed that there was a significant difference between asana only and power yoga (p = 0.000) and pranayama only and power yoga group (p = 0.000).

Null hypothesis number 2 that, "all the 3 yoga protocols will have same effect of the attitude towards yoga post their respective yoga protocols", therefore stands rejected.

Table-10: Pairwise Comparisons

Dependent Variable: Post Intervention Attitude towards Yoga

(I) Group	(J) Group	Mean Difference (I-J)	Std. Error	Sig.[b]	95% Confidence Interval for Difference[b] Lower Bound	Upper Bound
Asana only	Pranayama only	-.418	.412	.939	-1.419	.584
	Power Yoga	-3.577*	.421	.000	-4.600	-2.554
Pranayama only	Asana only	.418	.412	.939	-.584	1.419
	Power Yoga	-3.159*	.418	.000	-4.175	-2.144
Power Yoga	Asana only	3.577*	.421	.000	2.554	4.600
	Pranayama only	3.159*	.418	.000	2.144	4.175

Based on estimated marginal means

*. The mean difference is significant at the .05 level.

b. Adjustment for multiple comparisons: Bonferroni.

Table-10 shows the follow-up tests that were conducted to evaluate pairwise differences among the adjusted means for types of yoga intervention/protocol practiced. The Bonferroni procedure was used to control for Type I error across the four pairwise comparisons.

The estimated marginal means section of the output gives the adjusted means (controlling for the covariate 'pre-intervention yoga attitude scores') for each yoga protocol group. This simply means that the effect of 'pre-test scores' has been statistically removed. From these adjusted means, participants of power yoga protocol showed significantly higher attitude toward yoga post intervention on an average after adjusting for pre intervention yoga attitude scores in the power yoga group.

Table-11: Estimated Marginal Means

Estimates

Dependent Variable: Post Intervention Attitude towards Yoga

Group	Mean	Std. Error	95% Confidence Interval Lower Bound	Upper Bound
Asana only	42.308[a]	.295	41.724	42.892
Pranayama only	42.725[a]	.283	42.164	43.287
Power Yoga	45.884[a]	.303	45.285	46.484

a. Covariates appearing in the model are evaluated at the following values: Pre Intervention Attitude towards Yoga = 14.7069.

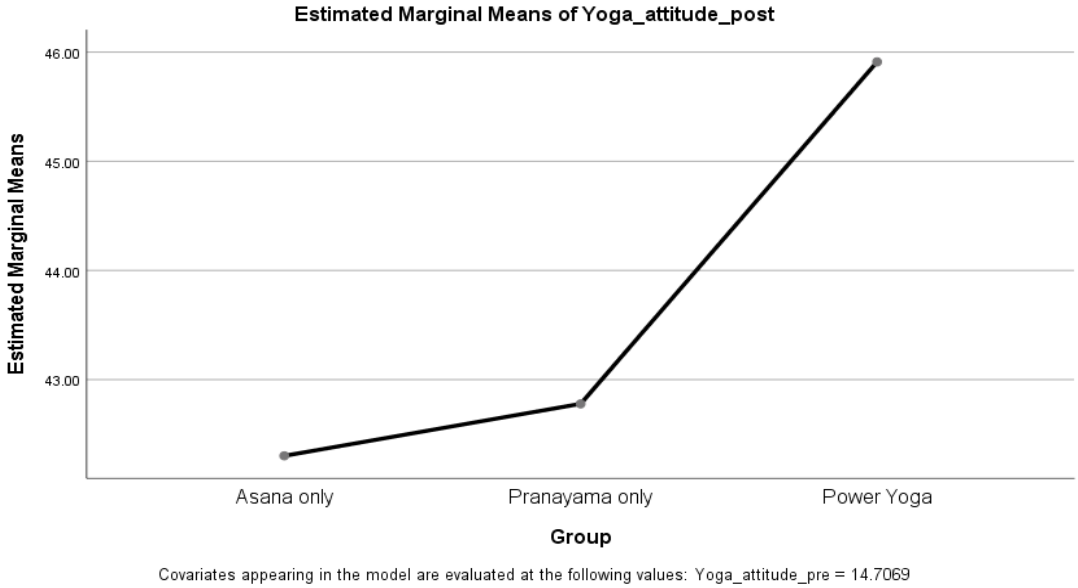
The results in table-11, showed that the students' who performed power yoga (M = 45.88) had significantly better yoga attitude scores, controlling for the effect of their pre-intervention scores, than students performed asana only (M = 42.30), Pranayama only (M = 42.75), and the mean scores of asana only and pranayama only on yoga attitude were same.

The third null hypothesis that "all the 3 yoga protocols will have high attitude towards yoga post their respective interventions" is accepted, since all the 3 interventions were found useful in improving the yoga attitude (high yoga attitude) as per the table-6 norms.

Contrary to the findings of this study, in a pilot study (Marshall M, et. al., 2020) that compared the Acute Effects of Different Forms of Yoga (Hatha style) and power (Vinyasa style) on Physiological and Psychological Stress, the results showed that meditative yoga decreased markers of psychological and physiological stress, while power yoga did not impart significant stress-relieving benefits.

In a study (Kumar, V., Malhotra, V. & Kumar, S., 2019) on total of 23 patients were recommended yoga protocols as initial form of treatment in snoring and mild to moderate sleep apnea. The study objective was to compare the physiotherapy recommendations in snoring patients with various yoga exercises postures for a period of 3 months. Clinical and statistically significant improvement gauzed by recommended score chart was discerned in majority of the subjects. it was concluded that the benefits of yoga in sleep disorders go beyond the scope of measured outcomes. The study reported that standardizing the protocols for yoga in treatment for snoring and sleep apnea is the need of the hour.

Fig-2: Profile plot of estimated marginal means



The Profile Plot shows us a visual picture of what is going on with our study. As we can see the line represents the estimated marginal means for the yoga attitude score at each of the types of yoga protocol practiced. These values correspond to those found in the estimated marginal means table shown earlier.

Conclusion:

In conclusion, the present study provides valuable insights into the impact of different yoga practices on the attitudes of school-aged students towards yoga. The findings revealed that students who participated in the power yoga intervention developed significantly more positive attitudes towards yoga compared to those who practiced asanas or pranayama alone.

The superior effect of power yoga on enhancing yoga attitudes among students could be attributed to its dynamic and intense nature, which may have been perceived as more engaging and relevant by this age group. The combination of physically challenging postures and flowing sequences in power yoga may have fostered a greater sense of accomplishment, self-efficacy, and enjoyment, thereby shaping more favorable attitudes towards the practice.

The implications of these results are twofold. First, they highlight the importance of tailoring yoga interventions to the specific needs, preferences, and developmental stages of the target population. By incorporating more dynamic and physically challenging elements, as seen in power yoga, educators and yoga instructors may be better equipped to capture the attention and engagement of school-aged students, thereby fostering more positive attitudes towards the practice.

Second, the findings underscore the need for a comprehensive and holistic approach to yoga education in school settings. While traditional practices like asanas and pranayama remain valuable components, integrating them with more contemporary and vigorous styles like power yoga may be more effective in promoting sustained interest and positive attitudes among students.

It is important to note that the study focused exclusively on male students, and future research should investigate whether these findings hold true for female students or mixed-gender populations. Additionally, exploring the potential mediating factors, such as perceived enjoyment, self-efficacy, or cultural influences, could provide further insights into the mechanisms underlying the observed differences in yoga attitudes.

Overall, this study contributes to the growing body of knowledge on the implementation of yoga programs in educational settings, specifically by shedding light on the potential role of different yoga styles in shaping students' attitudes and receptivity towards the practice. By considering these findings, educators and researchers can develop more effective and engaging yoga interventions that not only promote physical and mental well-being but also cultivate positive attitudes towards this holistic practice among school-aged populations.

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