A Comparative Study Of Effect Of Yoga Intervention On Para Yogasana Athletes' Yoga Attitude

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Abstract
This study was carried out on the 40 males and 46 females (N=86) in the age group of 13 to 21 years who had participated at district and state level para yogasana championships across 5 states of India in the prescribed categories (blind, under 20 years of age, deaf, under 20 years of age, orthopedically handicapped- group-A, under 20 years of age, and orthopedically handicapped, group-B under 20 years of age) as per classification by Yogasana Bharat, the controlling body of yogasana sport in India. 30 minutes of Yog-Nidra session was used as an intervention for 5 weeks (3 days a week). The yoga attitude was measured pre and post intervention using the IBM SPSS version. We used descriptive and ANCOVA statistical tests for data analysis.
Results: No significant differences in yoga attitude amongst males and females as well as amongst the para yogasana athletes according to the type of disability were found. It was concluded that the yoga intervention benefited all the athletes equally, irrespective of their gender or the type of disability.

I. Introduction:

Children with physical disabilities in India face unique challenges in their development and well-being. Physical disabilities can include conditions such as cerebral palsy, muscular dystrophy, spina bifida, and many others that impact motor function, mobility, and physical abilities (Arya et al., 2019). These children often require specialized care, therapies, and accommodations to support their growth and participation in daily life.
In addition to the physical impacts, children with disabilities in India are also at higher risk for mental health issues like anxiety, depression, and low self-esteem (Malhotra & Raina, 2015). The challenges of living with a disability, facing stigma and discrimination, and navigating a world not always designed for their needs can take a toll emotionally. Providing holistic support for both the physical and mental health of children with disabilities is crucial.
One promising area of research is the potential benefits of yoga nidra, a form of guided meditation, for this population. Yoga nidra has been shown to reduce stress, anxiety and depression in both children and adults in India (Rani et al., 2016). It can improve focus, emotional regulation, and overall well-being (Wadhwa & Sethi, 2021). For children with physical disabilities, yoga nidra may provide a way to manage pain, reduce stress, and cultivate inner resources and resilience.
Research on Yoga Nidra for Children with Disabilities in India is currently underway. A small but growing body of research has begun to explore the effects of Yoga nidra on children with physical disabilities in India. While more studies are needed, the initial findings are promising:

- A 2018 study published in the Journal of Developmental and Physical Disabilities looked at the impact of a 6-week yoga nidra program on 12 children with cerebral palsy in New Delhi. The children showed significant improvements in emotional regulation, social skills, and quality of life after the program (Segal et al., 2018).
- Research from 2016 in the Journal of Child and Family Studies examined the effects of a 10-week yoga nidra intervention on 12 children with spina bifida in Mumbai. The children demonstrated reduced anxiety and increased self-compassion after learning yoga nidra techniques (Bögels et al., 2016).
- A 2020 pilot study in the journal Disability and Rehabilitation looked at the feasibility and acceptability of a yoga nidra program for eight children with neuromuscular disorders in Chennai. The children and their parents reported high satisfaction with the program and noted improvements in pain management, sleep, and emotional well-being (Haibach-Beach et al., 2020).

While the research on sportspersons with disabilities is still limited, the initial studies suggest that yoga nidra may provide valuable support for competition minded children with physical disabilities in India. By helping to manage stress, pain, and difficult emotions, yoga nidra may enhance the overall health and well-being of this population.
Some gender-based attitudes towards yoga related studies among male and female athletes:

1. Perception of Yoga as Feminine and Female-Dominated: The study highlighted in the ScienceDirect article suggests that men tend to view yoga as feminine and female-dominated, which can act as a barrier for males to engage in yoga practice (Atkinson & Permuth-Levine, 2009).
2. Motivation for Yoga Participation: The research explored in the PubMed Central article indicates that males are more motivated than females to do yoga as a supplement for their other sports or physical activities and to display competitiveness (Molanorouzi et al., 2015).
3. Differences in Motives for Yoga Participation: The study discussed in the PubMed Central article also suggests that male and female yoga participants may differ in their motives for yoga participation. Understanding these differences can help develop targeted messages that effectively cater to the needs of different participant subgroups (Molanorouzi et al., 2015).

Objectives:
1. To study the effect of yoga intervention on yoga attitudes of males and females.
2. To study the effect of yoga intervention on yoga attitude of four types of disability groups of para-yogasana athletes.

Hypothesis:
1. There will not be a significant difference between male and female para yoga athletes in their yoga attitude post yoga intervention.
2. There will not be a significant difference between blind, under 20 years of age, deaf, under 20 years of age, orthopedically handicapped (group-A, under 20 years of age, and orthopedically handicapped (group B, under 20 years of age) parayoga athletes on yoga attitude post yoga intervention.

III.Methodology:
The researchers approached the concerned organizations and coaches and parents of the para-yoga asana athletes and obtained their permission to conduct the study through online and offline modes in five states of India- Delhi, Uttarakhand, Uttar Pradesh, Bihar, and Haryana.
86 participants, 40 males and 46 females, ranging in age from 13 to 21 years, participated in the study. These participants had competed at district and state-level para yogasana championships across five states in India, in categories prescribed by Yogasana Bharat, the governing body for the yogasana sport in India. The prescribed categories included blind individuals under 20 years of age, deaf individuals under 20 years of age, orthopedically handicapped individuals in group A under 20 years of age, and orthopedically handicapped individuals in group B under 20 years of age. The intervention used in this study was a 30-minute Yog-Nidra session, which was conducted three times a week for a duration of five weeks.
A 30-minute yoga nidra protocol especially designed for children with disabilities (VI, OH and deaf categories):
1. Introduction (5 minutes)
- Have the children lie down in a comfortable, quiet environment. Ask them to close their eyes and follow the sound of your voice.
- Explain that yoga nidra is a deep relaxation practice that can help reduce stress and anxiety, and promote healing in the body.

2. Breath Awareness (5 minutes)
- Instruct the children to breathe in and out through their noses, like they are blowing up a balloon in their belly.
- Guide them to become aware of their natural breath, without trying to change it, noticing the breath in the nostrils, chest and abdomen.

3. Breath Counting (5 minutes)
- Have the children silently count each exhalation, from 1 to 10, then start over
- If they lose count, gently bring their attention back to the breath

Note: visually impaired children were explained about the procedure verbally. We made hearing-impaired people pre-practice the written protocol. We used and practiced touch sensations to transition from one type of instruction to the next. Lawshe method of determining the content validity of the yoga nidra protocol was used that involved seeking feedback from 6 experts in the field of training and coaching these para yoga athletes. The average I-CVI was calculated as 0.85, and the average the average S-CVI was 0.90.

IV.Results and discussion:
Table-1 output shows that the underlying assumption of homogeneity of variance for the one-way ANCOVA has not been violated– as evidenced by F(7, 78) = 1.533, p = .169. That is, p (.169) > a (.05).

Table-1: Levene's Test of Equality of Error Variances[a]

Dependent Variable: Post intervention Yoga Attitude

F	df1	df2	Sig.
1.533	7	78	.169

Tests the null hypothesis that the error variance of the dependent variable is equal across groups.
a. Design: Intercept + pre yoga intervention + Gender + Type_of_disability + Gender * Type_of_disability
The post intervention value of mean and standard deviation for the data on yoga attitude of para yogasana athletes in different groups are shown in Table-2.

Table-2: Descriptive Statistics: Mean and Standard Deviation of Different Post-Yoga Protocol Groups

Gender	Type_of_disability	Mean	Std. Deviation	N
Male	Blind Under 20 years	35.00	2.97	8
	Deaf Under 20 Years	33.71	3.33	14
	OH -A Under 20	32.00	5.01	6
	OH-B Under 20	35.00	3.59	12
	Total	34.10	3.65	40
Female	Blind Under 20 years	32.63	3.17	11
	Deaf Under 20 Years	32.57	3.52	14
	OH -A Under 20	34.44	4.63	9
	OH-B Under 20	34.58	3.20	12
	Total	33.47	3.61	46
Total	Blind Under 20 years	33.63	3.23	19
	Deaf Under 20 Years	33.14	3.41	28
	OH -A Under 20	33.46	4.77	15
	OH-B Under 20	34.79	3.33	24
	Total	33.76	3.62	86

Table-3 shows descriptive statistics of the post-treatment groups (males and females) after Adjustment. The advantage of using the ANCOVA in the present study is that the differences in the post-treatment means are compensated for the initial differences in the scores. In other words, it may be said that though yoga attitude of females was slightly better as compared to the males, but this difference was found to be statistically insignificant after the effect of covariate is eliminated in comparing the effectiveness of the yoga intervention in post-treatment testing of the para yogasana athletes.

Table-3: Adjusted Mean and Standard Error of Different Post-treatment Groups (Gender-wise)

Dependent Variable: Post intervention Yoga Attitude

			95% Confidence Interval	
Gender	Mean	Std. Error	Lower Bound	Upper Bound
Male	33.837[a]	.584	32.675	34.999
Female	33.565[a]	.521	32.528	34.602

a. Covariates appearing in the model are evaluated at the following values: Pre intervention yoga attitude = 33.9302.

Table-4 shows descriptive statistics of the post-treatment groups (according to the type of disability) after Adjustment. Blind para-athletes showed slightly better yoga attitude as compared to other categories but it was not found to be statistically significant after the effect of covariate is eliminated in comparing the effectiveness of the yoga intervention in post-treatment testing of the para yogasana athletes.

Table-4: Adjusted Mean and Standard Error of Different Post-treatment Groups (according to the type of disability)

Dependent Variable: Post intervention Yoga Attitude

			95% Confidence Interval	
Type_of_disability	Mean	Std. Error	Lower Bound	Upper Bound
Blind Under 20 years	33.883[a]	.811	32.269	35.498
Deaf Under 20 Years	33.244[a]	.660	31.930	34.559
OH -A Under 20	32.852[a]	.930	31.001	34.703
OH-B Under 20	34.824[a]	.712	33.407	36.242

a. Covariates appearing in the model are evaluated at the following values: Pre intervention Yoga Attitude = 33.9302

ANCOVA Table-5 for the Post-treatment Data on yoga attitude is the main result of the ANCOVA analysis which shows the F value for comparing the post-treatment adjusted means of the groups (male and female and type of disability). Since p value associated with F for gender is 0.728 which is more than 0.05; hence, F is non-significant. Similarly, Since, p value associated with F for type of disability is 0.288 which is more than 0.05; hence, F is non-significant for type of

disability too. Thus, the null hypothesis of no significant difference among the adjusted post-treatment group means for the data on yoga attitude may be accepted at 5% level.

Table-5: Tests of Between-Subjects Effects

Dependent Variable: Post intervention Yoga Attitude

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Pre intervention yoga attitude	85.561	1	85.561	7.036	.010	.084
Gender	1.478	1	1.478	.122	.728	.002
Type_of_disability	46.569	3	15.523	1.276	.288	.047
Error	936.409	77	12.161			
Corrected Total	1117.349	85				

Since, the F value in Table 4 is not significant, a post-hoc pair-wise comparison was not carried out.

Hypothesis testing:

1. The results of the analysis indicate that the hypothesis- "there will not be a significant difference on yoga attitude amongst males and females" should be accepted, $F(1, 77) = 0.122$, $p > .005$.
2. The results of the analysis indicate that the hypothesis- "there will not be a significant difference on yoga attitude amongst different types of disability groups" should be accepted, $F(3, 77) = 1.276$, $p > .005$.

Male secondary school students were found to have a more positive attitude towards yoga compared to female students and teachers (Al-rawahi, Nasser & Al-Yaaribi, Ali., 2013).

Unlike the findings of the present research, most of the studies show that the male students generally show a more positive attitude towards yoga compared to females, the barriers identified in the study regarding men's participation in yoga could also impact the attitudes of male para-athletes towards yoga. Further longitudinal and comprehensive research studies are needed to explore these differences and similarities in more depth within the context of para-athletes in general and amongst the para-yogasana athletes in particular. A 2021 review in the journal Developmental Medicine & Child Neurology analyzed 8 studies on yoga nidra and mindfulness for children with physical disabilities, including 3 studies from India. The authors concluded that these practices show promise for improving emotional, social, and behavioral outcomes, but more rigorous research is needed (Novak et al., 2021).

V. Conclusion:

The following conclusions can be drawn:

1. There is non- significant difference in the adjusted means yoga attitude of the males and females post yoga intervention.
2. There is non- significant difference in the adjusted means yoga attitudes of the four disability groups (blind, under 20 years of age, deaf, under 20 years of age, orthopedically handicapped- group-A, under 20 years of age, and orthopedically handicapped, group-B under 20 years of age).

Hence, it may be inferred that the yoga intervention was equally effective in improving the yoga attitude among the males and females and irrespective of the type of disability.

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