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The Effects Of Yoga Practice In Department Of Physical Education On Students Motor Abilities And Social Behavior

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ABSTRACT:

In recent years, yoga programs in Student hood have been implemented in schools, to promote the development for Student. Aim: To investigate the effects of yoga program in physical education classes on the motor abilities and social behavior parameters of 18 years to 25years students. Methods: The study included 30 Students from the 1st grade of a Department of Physical Education and Sports Sciences in the Andhra University, Visakhapatnam. The Students participated in a 12-week intervention, twice weekly, with 45 min each session. To assess Students performance, we used the Bruininks-Oseretsky Test of Motor Proficiency - Second Edition, the flexibility test (sit and reach – Eurofit, 1988), the Pictorial Scale of Perceived Competence and Social Acceptance for Young Student and semi-structured interviews with Students, parents, and classroom' teacher. Data were analyzed with Wilcoxon test and level of significance was 5%. Results: The yoga program was well accepted by Student, Student also demonstrated significant and positive changes in overall motor abilities scores (balance, strength, and flexibility). In addition, the interviews reported changing in social behavior and the use of the knowledge learned in the program in contexts outside of College. Conclusion: These findings suggest that the implementation of yoga practice in physical education lessons contributed to Students development.

Keywords: yoga, Department of physical Education

INTRODUCTION

Motor skill intervention programs in young age have been effective in providing participants benefits on motor, affective, and social development. Recognizing the benefits of yoga' practice to promote overall health, in recent years, yoga programs for Student have been implemented in several countries and recently also in Department of Physical Education And Sports Sciences ,Andhra University. Although yoga is an ancient practice that seeks a balance between the body, mind and emotions and the literature highlight its benefits on the motor, physical, cognitive, and social aspects, its effectiveness on Student development is scarce.

Yoga programs have gain popularity; however, there is a lack of studies in this field, especially involving school-age Student. Furthermore, studies are very restricted and focus on the analysis of few aspects of participants' improvements. The objective of this study was to investigate the effects of a 12-week yoga program implemented in a Physical Education curriculum on the motor, physical, and behavioral parameters of 18 years to 25 years students. Our hypothesis was that through a yoga program, students would improve their motor abilities and physical capacities, and also present some positive changes in behavior toward yoga practice.

METHODOLOGY:

Assessment

The balance, running speed and agility, and strength subtests of the Bruininks-Oseretsky Test of Motor Proficiency - Second Edition were used to assess Student motor abilities. The performance of the students in each task generated a gross score, and the sum of the tasks generated the total raw score, which was converted to a standard score according to the student sex and age. For this study, we used the results by task and the total raw score for each subtest.

A version of the sit and reach from Eurofit test was used to assess Student flexibility. The Student sited on the floor barefoot and with legs stretched out straight ahead. Both knees locked and pressed flat to the floor. Student placed their heels on the mark and then with palms facing downward and the hands on top of each other reached forward along the measuring. Student hold the position for seconds while the distance was recorded in centimeters. The better of two attempts was considered.

The Pictorial Scale of Perceived Competence and Social Acceptance for Young Student (PSPCSA) was used to assess the Student perceptions of competence and social acceptance. This scale consists of 24 items organized into four subscales: Perceived cognitive and motor competence, social and maternal acceptance. Each question includes two figures: One of these figures represents a competent/accepted Student, and the other a Student not as competent/accepted. After choosing which figure feels more alike them, Student must decide how much the level of concordance (range: From 1 [low proficiency/acceptance] to 4 [high competence/acceptance]). The sum of the questions result in the subscale score, and the sum of the subscales results in the total score.

Subjects

The selection of the sample was intentional, according to Student's and parents' acceptance. The study included 30 Student (15 males and 15 females), aged 18 years to 25 Years old, who had no previous experience with yoga. The Student were enrolled in the 1st grade of an elementary public school located in the periphery of a major Department of Physical Education And Sports Science, Andhra University. One of the Student had a diagnosis of autism; none of the others were diagnosed with disabilities. The informed consent was obtained from the parents and/or legal guardians and the college student of education.

Yoga program

The yoga program was implemented in the physical education classes during 12 weeks, twice a week for 45 min each lesson. Since the public school has no gym or other safety space, the lessons were implemented in the Student classroom. A student-centered approach of teaching was implemented. Appropriated practices were provided with a yoga movement curriculum with scope and sequence based on Student the initial level of performance in order enhances cognitive, social, and motor development. The teacher used direct and indirect learning strategies, encouraging Student do modeled movements, and to discovery the different ways to move. The instruction was meaningful and adequate to the Student level of understanding, using simple words, and cue word to perform the yoga postures. The teacher also encourages the self-expression throughout the movement and equally encourages male and female as well the Student with disability to achieve success and cooperate with each other. Different skill levels of yoga tasks were presented in each session that encompassed group diversity of skills levels. The teacher strategies also supported the autonomy of Student, personal and group achievements, and the active participation in decision-making during the learning process.

Data analysis

Statistical analysis was conducted using SPSS-20.0 (Statistical Package for Social Sciences, IBM). Descriptive statistics were presented (median, quartiles, minimum, and maximum), and due to the small number of participants and non-normality distribution of the data, nonparametric analyses were used adopting $P \leq 0.05$. The Wilcoxon test was used to compare the pre- to post-intervention changes in the raw scores for the tasks and subtests (balance, running speed and agility, strength, and flexibility) and in the PSPCSA.

Using the Student's semi-structured interviews, convergent meanings were organized and resulted in three categories: (1) Content learned in the program, (2) desire to sustain yoga practice over time, and (3) self-perceptions of intervention impact. Data reduction from the Student interviews into the three categories was conducted using of frequencies of behavior, presented in figures. The speeches more representative of these three categories also were presented.

Table 1

Pre and post intervention raw scores and score for each BOT-2' task and subtest total score

Sutabul and tasks	Pre Introversion		Post Introversion		P
	Md(p25-75p)	Min -Max	Md(p25-p75)	Min-max	
Balance	31(29-32)	16-34	32.(30.2-33)	22-35	0.032
B1	10(10-10)	4--10	10(10-10)	10--10	0.195
B2	8.5(7.9)	6--10	9(8-10)	7--15	0.088
B3	10(10-10)	4--10	10(10-10)	8--10	0.195
B4	10(10-10)	5--10	10(10-10)	1--10	1.52
B5	5.5(3.2-8)	0--13	10(10-10)	1--16	0.009
B6	3(2-6)	1--10	6.5(4.2-9.7)	2--10	0.012
B7	10(5.5-10)	1--10	10(6-10)	4--10	0.765
B8	10(10-10)	3--10	10(6.5-10)	2--10	0.042
B9	4(3-5)	1--8	3(2.5-5.5)	1--8	1.235
Agility	21.5(15.7-25)	12--28	20.5(17.2-23)	13--29	0.932
RSA	10(9.2-11)	8--13	10(10-11)	5--13	1.652
RSA2	10(8.2-14)	4--17	13(11-14.7)	8--16	0.105
RSA3	11(6-17)	2--28	11(9-15.5)	3--26	1.456
RSA4	10(7-15.2)	2--21	9(7-14)	5--19	1.235
RSA5	11.5(10.2-17.5)	7--27	11(9.2-15.5)	8--21	0.165
Strength	29(25.2-30)	21--32	29(28.5-32.5)	18-35	0.09
S1	85.5(75-98.5)	63--114	93.5(71.5-109)	55-130	0.654
S2	17.5(15-20.7)	12--26	18.5(16-21.5)	10--24	1.256
S3	17(13.2-23.7)	9--27	18.5(15.2-21.5)	8--25	1.865
S4	32.5(23-56.7)	12--60	30(20-56.7)	5--60	1.856
S5	9.5(5-24.2)	0--39	16(11-47.2)	8--60	0.105
Flexibility	36(30.2-43.5)	23--56	41.5(30.7-47)	14--57	0.02

Md=Meadian,p25=Percentile 25,p75=Percentile 75,Min=Minimum, Max=Maximum,B1-B9=Balance Task,RSA1-5=Running speed and agility Task,S1-S5=Strength Task

Table 2
Pre and post intervention results of perceived competence

Sutabul and tasks	Pre Interversion		Post Interversion		p
	Md(p25-75p)	Min -Max	Md(p25-p75)	Min-max	
Cognitive	23(15-24)	9--25	20(14-24)	14.26	0.266
Motor	24(19-25)	16--25	22.5(20--25)	15.25	0.965
Social	22(18--25)	12--25	24.5(16.9-26)	14.26	0.825
Maternal	19(16-24)	8--25)	19(16-23.5)	10.23	0.962
Total Score	81(69-93)	49-96	90.5(72.5-93.5)	56.32	0.465

Md=Meadian,p25=Percentile 25,p75=Percentile 75,Min=Minimum,Max=Maximum,B1-B9=Balance Task,RSA1-5=Running speed and agility Task,S1-S5=Strength Task

Figure 1

Frequency of Student's responses about yoga classes content learned

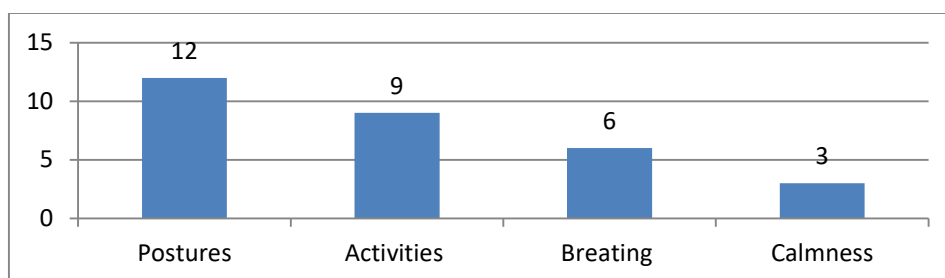


Figure 2

Frequency of Student's responses about the desire to continue the practice of yoga

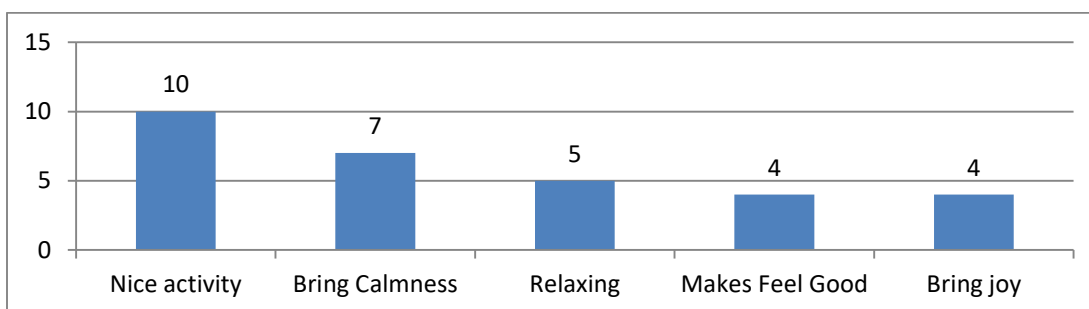
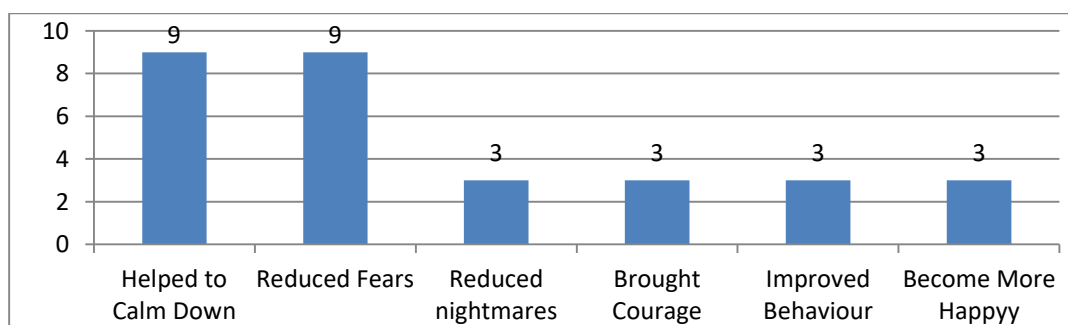


Figure 3

Frequency of Student's responses relating to self-perceived changes after practicing yoga



DISCUSSION

This study was conducted to analyze the effects of yoga practice on the motor, physical, and behavioral parameters of 6–8-year-old Student. Our findings suggest positive improvements on the static and dynamic balance, and strength and flexibility; the participants also reported positive feelings related to the yoga practice.

Regarding balance, all the improvements corroborate with previous studies that also suggested that the practice of yoga promotes significant gains on the static and dynamic balance of Student. We suggest that these gains could be related to the practice of some yoga postures, such as the airplane (Virabhadrasana C), tree (Vrksasana), surfer (Virabhadrasana B), and star (Utthita Trikonasana) that requires support on one foot, the trunk tilt forward and also generating instability and the need to working in balance.

The Student's ability to speed running and performed agility tasks showed improvement, gains were observed during the tasks of set the pace and jump sideways with feet together. No studies were found related to the assessment of these abilities after the practice of yoga in Student that to some extension limits our possibilities to compare results. It has been suggested that yoga promotes improvements in motor coordination and general motor control, consequently, could generate improvements in total body coordination and temporal organization, which are essential features perform speed and agility tests. Further studies are necessary to improve the yoga effects on the speed and agility of Student.

The results observed in this study regarding Student enhancements on strength received support from three previous. Researchers reported visible improvements on strength as a result of participation on a yoga intervention. In addition, increases in the median were large [Table 1], which indicate a probable limitation to achieve significance in some strength tasks due to the reduction in number of Student in this study. Moreover, the strength subtest showed significant and positive change, so the discrete changes (small increments) of each task were sufficient to indicate positives changes in strength pattern of Student. During the program, several yoga postures emphasize this physical capacity, such as superman (Salabhasana), boat (Navasana), invisible chair (Utkatanasana), and half bridge (Setu Bandhasana). These postures that require the work of different muscle groups, such as dorsal and abdominal region, as well as upper and lower limbs, that may have influenced the positive results observed in Student performance.

The positive increments in flexibility performance also corroborate with previous research. We suggested that these gains are result from the practice of the postures that emphasizes muscles, stretching. Some examples of postures that may have contributed for these results are the sandwich (Paschimottanasana and Utanasana), dog (Adho Mukha), butterfly (Baddha Konasana), and snake (Bhujangasana). All these postures require the maintenance position and different muscle groups' stretching impacting the Student performance.

No significant results were observed on the perceived competence and maternal and social acceptance results. Although previous studies highlight that yoga practice could promote the increase of self-perception and self-regulation of behaviors, our study could not find support for these changes in behavior. However, some of the Student thoughts illustrate well a couple of changes in self-perception and self-improvement (please refer to Speech 5). It is important to notice that self-perceptions are hard to be changed in a short period of time, may be an extensive program would detect more convincing changes related to this parameter.

In addition, improvements in social interactions (refer to speech 7) and reflection about health-related values were also reported (refer to speech 10), similar to the previous study. The literature also supports that yoga could contribute in reducing the levels of stress and anxiety in Student, which was clearly noticed in Student's interviews (refer to speeches 1, 2, 4, and 9).

Previous studies suggest that yoga practice could contribute in increasing social acceptance, communication, and contributions in classes, result also observed in Student's interviews. The speeches 7 and 9 were very strong in expressing these feelings. Student reported that after the yoga program they start to play with friends more often, felt more intelligent and well behaved in the class. The yoga practice for Student seems to have a significant impact on general well-being, resulted confirm in this study.

Ultimately, the benefits reported in Student, in this study, are similar to the findings for adults. Our results supported that yoga practice is very suitable for the school environment, serving as an educational intervention that promotes development and health for Student, as previously suggested. It could also contribute for the well-being of Student's future if constantly included in the curriculum program.

The limitations of the study were the short period of intervention that was limited by the school board of education, the small sample size since it was an automatic choice for Student, and also the lack of a control group. Further studies are necessary to detailed determine the changes that a yoga program can generate for school-age Student, considering the educational values of this practice.

RESULTS

Balance

Positive changes, from pre- to post-intervention, were observed in the balance subtest and in the following tasks: B2 (walking on a line), B5 (walking touching heel and toes on the line), B6 (staying stabilized with one leg over the line and with eyes closed), B8 (staying stabilized touching heel and toes on the balance beam) [Table 1].

Running speed and agility

Positive changes, from pre- to post-intervention, were observed in the running speed and agility subtest and RSA2 task (set the pace). A tendency to significance was observed in the RSA5 task (jump sideways with feet together) [Table 1].

Strength and flexibility

A positive change from pre- to post-intervention was observed in the strength subtest and the following strength task: S5 task (lift arms and legs in the prone position). Positive changes, from pre- to post-intervention, were also observed for flexibility scores [Table 1].

Perceived competence

Regarding cognitive and motor perceived competence, as well as for the maternal and social acceptance, there were no significant differences from pre- to post-intervention [Table 2].

Student interviews

Content learned in the program

Figure 1 shows the frequency of Student's answers about what they have learned in yoga classes. The majority of the Student recall the postures, the fun activities as well as the breathing exercises learned in the program. Student also highlighted how important were being these tools and how they were using this in their lives. The following speech emphasizes the Student's meaning related to the yoga program,

“We learned that when we are in bad times we have to do yoga because it calms us. It means that calms the heart.” (Speech 1)

Desire to sustain yoga practice over time

When questioned about the desire for future practice, all Student expressed that they would like to continue practicing yoga at school in their physical education lessons ($n = 15$). When asked why they would like to continue the yoga practice, Student responses reflected different desires, detailed in Figure 2, with the prevalence of “nice activity” and “relax and calm feelings” as answers. Student justified this desire relating to positive feelings, overcome difficulties, sadness, and fears. Some of the discourses listed below also reflect their thoughts about this theme and also express how they felt great during the yoga classes:

“Yoga is for us to relax, to feel better and to feel calm while in sad and emotional moments” (Speech 2);

“Yoga is breathing, to breathe better, for when we feel sad, for when we are in a bad mood, then Yoga does well” (Speech 3);

“Yoga is something that can make us feel calmer and more relaxed in the days that we are mad or angry.” (Speech 4)

Self-perceptions of intervention impact

When questioned about their feelings related to changes after practicing yoga, the majority of Student, although addressing the question with different perceptions, recalled increments in sensations of calm, courage, good behavior, and happiness as well as the reduction of fear [Figure 3]. Some speeches also portrayed improvements in social interactions and in the perceptions of doing better. The following discourses portrait these feelings about this theme:

“And I feel that I’m becoming a little better at what I do” (Speech 5);

“The change is that now I’m more happy, I don’t have nightmares anymore. I’m also not afraid. Now I’m happy” (Speech 6);

“I felt good, then my friends liked me and wanted to always play with me for them learn” (Speech 7);

“It's because when I’m afraid of something I say that: HAAAAAAAAA, (referring to the HAAA breath) I do it because then I get braver” (Speech 8);

“It is for calm down, to the brain become intelligent. Now I’m better behaved because you made a lot of cool stuff.” (Speech 9)

The Student also reported that they carried out the practice at home to show or teach their parents ($n = 3$), to feel better ($n = 1$), to improve their health ($n = 1$), because it is a cool practice ($n = 2$), and because she/he likes ($n = 1$). One Student also reported not only the personal benefits of yoga but also the positive impact extended to her family, specially related to health aspects. In regards to her thought about this theme, the student affirmed:

“I saw that yoga does well for my health, and also for my parents’ and my family's health.” (Speech 10)

Teacher interview

The classroom teacher stated that the Student were in general more calm and concentrated. She also highlighted that the students were very affectionate to the yoga classes, and she said that the values of respect developed and discussed in the yoga classes had impact on her classes by improving Student positive interactions.

Parental questionnaire

Although only half of the parents returned the questionnaire, the answers demonstrated that in the parents' perceptions, most of Student started to be more active at home practicing in the free times the postures learned in the program (n = 6). Parents also reported that the Student were more relaxed and calm (n = 4), and parents noticed improvements on Student's posture (n = 1) and breathing (n = 1)

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