

# Sustained improvement in self-esteem in children after 13 months of unsupervised yoga practice

## Abstract

**Background:** A randomized controlled trial on the effect of yoga or physical exercise on physical, cognitive and emotional measures in 98 school children was conducted in 2010 in a school in north India. There was no attempt to give the children any intervention after that. Following the finding of the study conducted in 2010 which showed significant improvement in self-esteem, a 13month longitudinal retrospective follow-up study was conducted in February, 2012.

**Aims:** The aims were

- i. To determine if any of the children were continuing with the yoga practice on their own, and
- ii. If the continued practice of yoga and physical exercise would influence their self-esteem.

**Materials and methods:** A follow-up assessment was carried out after 13months after completion of the study. 26 school children (13 in each group, i.e. yoga and physical exercise) whose ages ranged between 10 and 13years (group mean  $\pm$ S.D.  $11.0 \pm 1.16$ years) responded to the follow-up contact. In the yoga group, all of them mean age (S.D.) =  $11.92(0.64)$  were practicing yoga. This number is 26.5 % of the original 49 children in the yoga group. Self-esteem of the participants was measured using the Indian adaptation of Battle's self-esteem inventory at the 13month assessment. Data were analyzed with repeated measures analyses of variance and post-hoc tests were Bonferroni adjusted.

**Results:** There was a significant increase in social and parental self-esteem in the yoga group while the physical exercise group had a significant increase in general and parental self-esteem.

**Conclusion:** Yoga and physical exercise both had positive effects on self-esteem in school children after a 13months follow-up. Regular practice of yoga and physical exercise can improve self-esteem even if unsupervised.

**Keywords:** self-esteem, pre-adolescents, unsupervised yoga practice, physical exercise

Volume 7 Issue 3 - 2017

Abhishek K Bhardwa, Nilkamal Singh,  
Acharya Balkrishna, Shirley Telles  
Patanjali Research Foundation, India

**Correspondence:** Shirley Telles, Patanjali Research Foundation,  
Haridwar-249405, Uttarakhand, India,  
Email shirleytelles@gmail.com

**Received:** February 17, 2017 | **Published:** May 30, 2017

**Abbreviations:** SE, self-esteem; QOL, quality of life; SD, standard deviation; RMANOVA, repeated measures analyses of variance; PASW, predictive analytics soft ware.

## Introduction

Self-esteem can be defined as an individual's attitude about themselves, involving self-evaluation along a positive-negative dimension.<sup>1</sup> The role of self-esteem is very important at all stages of life. According to the father of Humanistic psychology Abraham Maslow (1987) 'without the fulfillment of the self-esteem need, individuals will be driven to seek it and would be unable to obtain self-actualization'.<sup>2</sup> The World Health Organization also recommends strengthening students' self-esteem to protect children and adolescents against mental distress and despondency, enabling them to cope adequately with difficult and stressful life situations.<sup>3</sup>

Self-esteem is very necessary for optimum health of school going children. High self-esteem is related to increased school performance, improved health, and productive behavior<sup>4</sup> while low self-esteem is related to several physical and mental health disorders such as eating disorders, depression, and anxiety. In addition, low self-esteem might cause interpersonal problems, teenage pregnancies, loneliness, eating disorders and suicidal tendencies.<sup>5</sup>

These days' children are facing multiple and varied psychological challenges both at school and at home.<sup>6</sup> Academic stress in particular is increasingly common in children.<sup>7</sup> As a result of increasing pressure, there is an increase in school dropouts, under performance, teenage violence, suicide, alcoholism, drug abuse and other negative psychological outcomes.<sup>8</sup> In fact epidemiological research in a developing country like India showed a prevalence rate of 7 to 12 percent of emotional and behavioral problems in children.<sup>6</sup> Children are also faced with the challenge to perform well in school.<sup>9</sup> These problems can be managed by the enhancement in the level of self-esteem in school children.

Low self-esteem is associated with symptoms of depression in children.<sup>10</sup> A study conducted on children in India demonstrated that low self-esteem is associated with several other mal-adaptations, as well.<sup>11</sup>

Yoga plays a significant role in enhancing ones mental and physical health as substantial interest has begun to emerge around the implementation of mind-body interventions such as yoga in schools.<sup>12</sup> Yoga could provide tools for children to remain centered or regain focus, so they may feel themselves capable of facing present-day challenges they experience and cope with stressful situations.<sup>13</sup> There are a large number of studies conducted on children to see the

effects of yoga on their mental health,<sup>14</sup> physical fitness,<sup>15</sup> cognitive performance,<sup>16</sup> and depth perception,<sup>17</sup> but there are fewer studies assessing the effect of yoga on self-esteem.<sup>18</sup>

Self-esteem and school adjustment of children in primary school has a close relationship with the development of personality and mental health.<sup>19</sup> A study provides significant evidence that the intervention of *Maum* meditation (a meditation program) had positive effects on self-esteem and school adjustment of children in the early stage of primary school.<sup>19</sup> In another study there were no gender differences found in the overall self-esteem in pre-adolescence.<sup>20</sup>

Previously, a randomized controlled trial was conducted to assess the effects of yoga or physical exercise on physical, cognitive and emotional measures in 98 school going children.<sup>21</sup> In this study, comparable effects of yoga or physical exercise on physical fitness and Stroop task performance were found in school children after three months of the two interventions in after-before comparisons while social self-esteem was higher in the physical exercise group ( $P < 0.05$ ) in a between groups comparison. The yoga group showed a significant increase in total self-esteem ( $P < 0.001$ ), general self-esteem ( $P < 0.001$ ) and parental self-esteem ( $P < 0.01$ ) in a within group comparison of post compared to pre data.

Physical exercise is also associated with a positive effect on depression, anxiety, mood status, self-esteem and higher academic performance.<sup>22</sup> These findings were supported by a study on 540 elementary school children.<sup>23</sup> Students were randomly assigned to a physical exercise program or a no physical exercise control condition during one academic year. The quality of life (QOL) was assessed at baseline and post-intervention using the Child Health Questionnaire. Sub-population analysis showed that physical exercise had a positive effect on psycho-social QOL especially in urban and over-weight students. There was little effect of the physical exercise program on QOL overall.

The present study is a sequel to a randomized controlled trial conducted earlier in which school children were assigned randomly to yoga or physical exercise and showed a between groups difference in self-esteem.<sup>21</sup> The follow-up was at three months. Thirteen months later no attempt was made to supervise either intervention. The children were reassessed for their self-esteem to determine the effects of the two interventions on self-esteem in a comparison between baseline data and data taken 16 months (3 months + 13 months) later.

## Materials and methods

### Participants

A randomized controlled trial on the effect of yoga or physical exercise on physical, cognitive and emotional measures in 98 school children was conducted in August-September, 2010 to December, 2010<sup>21</sup> in a school in north India. There was no attempt to give the children any intervention after that. A 13 month follow-up study was conducted in February, 2012. The aim was to determine if any of the children were continuing with the yoga practice on their own, as the physical exercise is included in the curriculum but was given once a week. Twenty-six school children (13 in each group i.e. yoga and physical exercise) whose ages ranged between 10 and 13 years (group means's.,  $11.0 \pm 1.16$  years) were followed up. In the yoga group, all of them mean age (S.D. =  $11.92(0.64)$ ) were practicing yoga. Students of both groups

- a. Belonged to an urban area.

- b. Their socio-economic status was categorized as lower middle class,<sup>24</sup> with an average income of Indian Rupees 3, 40,000 per annum.

The study was approved by the Ethics Committee of Patanjali Research Foundation and signed informed consent was taken from the Principal of the school who informed the parents about the study. The parents gave their informed consent after receiving the information from the Principal of the school. The original study<sup>21</sup> was registered in the Clinical Trials Registry of India (CTRI/2012/11/003112).

### Design

The study was a longitudinal retrospective study. The follow-up assessment was carried out after 13 months. The aims of the present study were:

- i. To assess the level of self-esteem in pre-adolescent school children after thirteen months of unsupervised yoga practice or once a week physical exercise (compared with 5 days in the study in 2010).<sup>21</sup>
- ii. To compare the level of self-esteem (baseline and after 13 months of unsupervised practice) between yoga and physical exercise groups.
- iii. To find out how many children were practicing yoga at home when unsupervised.

### Assessments

Self-esteem of the participants was measured using the Indian adaptation of Battle's self-esteem inventory at the time of follow-up. The reliability of the questionnaire has been established for use with Indian children.<sup>25</sup> The questionnaire has 50 close-ended questions with 4 subscales. The subscales were

- a. General self-esteem,
- b. Social self-esteem,
- c. Academic self-esteem, and
- d. Parental self-esteem.

There are 20 items on general self-esteem, 10 items on social self-esteem, 10 items on academic self-esteem, and 10 items on parental self-esteem. The test was administered in a group. The participants were given instructions to attempt all the questions, and to complete filling in the questionnaire in the allotted time i.e., 15 minutes, and to ask the instructor if they were not able to understand any question.

### Data extraction

Scoring of the self-esteem inventory was carried out by an individual who was blinded to which group the participants belonged. The self-esteem scale was binomial. In the manual it is clearly mentioned which responses should be scored as '1' depending on whether the response was "No" or "Yes". If the responses did not follow this pattern items were scored as '0'. Total self-esteem was calculated by adding the scores of the four subscales (that is general, social, academic, and parental self-esteem).

### Data analysis

Repeated measures analyses of variance with Bonferroni adjustment compared data collected at the time of follow-up with data collected before the two interventions, using PASW Version 18.0.

## Results

The group means values±SD for different sub scales of self-esteem between yoga and physical exercise groups are given in Table 1. The

ANOVA values for the Within-Subjects factor (States), Between-Subjects factor (Groups) and interaction between the two for the different sub scales of self-esteem are provided in Table 2.

**Table 1** Values for the Indian adaptation of Battle's self-esteem inventory

Variables	Yoga Group (n = 13)			Physical Exercise Group (n = 13)		
	Pre	Post	Cohen's d	Pre	Post	Cohen's d
Total score of S.E.	36.38 (5.33)	38.23 (3.86)	0.402	36.85 (6.13)	39.54 (4.50)	0.506
General S.E.	13.15 (2.70)	14.62 (2.22)	0.597	13.23 (3.03)	15.85 (2.27)**	0.989
Social S.E.	5.15 (1.91)	6.38 (1.61)*	0.698	6.46 (1.76)	6.69 (1.49)	0.141
Academic S.E.	8.62 (1.12)	8.54 (0.88)	0.080	8.31 (1.65)	8.92 (0.95)	0.469
Parental S.E.	9.46 (1.20)	8.69 (0.63)*	0.841	8.85 (1.14)	8.08 (1.12)*	0.681

S.E: Self-Esteem; SD, Values are group mean

\*P<0.05, post-hoc analysis with Bonferroni adjustment; \*\*P<0.01, post-hoc analysis with Bonferroni adjustment compared with pre

**Table 2** ANOVA for the Indian adaptation of Battle's self-esteem inventory

Factors	Variables	F	df	Huynh-Feldt ε	P
Within subjects	Total score of S.E.	3.945	1, 24	1	0.059
	General S.E.	10.442	1, 24	1	0.004
	Social S.E.	3.247	1, 24	1	0.084
	Academic S.E.	0.838	1, 24	1	0.369
	Parental S.E.	10.084	1, 24	1	0.004
Between subjects	Total score of S.E.	0.303	1, 24	-	0.587
	General S.E.	0.685	1, 24	-	0.416
	Social S.E.	2.327	1, 24	-	0.140
	Academic S.E.	0.011	1, 24	-	0.916
	Parental S.E.	3.444	1, 24	-	0.076
Groups X States	Total score of S.E.	0.137	1, 24 (States) X 24 (Groups)	-	0.714
	General S.E.	0.836	1, 24 (States) X 24 (Groups)	-	0.370
	Social S.E.	1.520	1, 24 (States) X 24 (Groups)	-	0.230
	Academic S.E.	1.385	1, 24 (States) X 24 (Groups)	-	0.251
	Parental S.E.	0.000	1, 24 (States) X 24 (Groups)	-	1.000

S.E, Self-Esteem

## Post-hoc analyses

There was a significant increase in social self-esteem (P<0.05) and parental self-esteem (P<0.05) in the yoga group while a significant increase in general self-esteem (P<0.01) and parental self-esteem (P<0.05) in the physical exercise group was found.

## Discussion and conclusion

The present thirteen month follow-up study showed a significant increase in social (P<0.05) and parental self-esteem (P<0.05) in the yoga group while a significant increase in general (P<0.01) and parental self-esteem (P<0.05) in the physical exercise group was found.

This study is a continuation of a previous study, in which the social self-esteem was found higher in the physical exercise group (P<0.05) in between group comparisons. The yoga group showed a significant increase in total self-esteem (P<0.001), general self-esteem (P<0.001) and parental self-esteem (P<0.01) in within group comparisons.<sup>21</sup>

Self-esteem is related to the evaluative judgments children make about their characteristics and qualities, including their attitude about themselves and their sense of worthiness.<sup>26</sup> Social and parental self-esteem increased after yoga while general (P<0.01) and parental self-esteem (P<0.05) increased after physical exercise when the data were compared between yoga and physical exercise groups (thirteen month follow-up data compared with the pre data i.e., before intervention).

This means parental self-esteem significantly increased after yoga and physical exercise while general self-esteem increased after physical exercise and social self-esteem increased after yoga.

General self-esteem refers to a person's overall perceptions of their worth.<sup>27</sup> Parent-related self-esteem refers to children's perceptions of their status at home, involving subjective perceptions of how their parents view them.<sup>27</sup> In a study on 128 families, each consisting of a mother, a father, and a child in late adolescence (17 to 19 years of age), it was found that children's self-evaluations were much more strongly related to their perceptions of parental behavior than to parent's self-reported behavior.<sup>28</sup> Preadolescent self-esteem is closely related to family interactions and family support.<sup>29</sup> Social self-esteem is the aspect of self-esteem that refers to an individual's perception of and feelings about the quality of their relationships with peers.<sup>30</sup> A stepwise multiple regression analysis was conducted to identify family variables predictive of social self-esteem.<sup>31</sup> High levels of family cohesion and number of siblings significantly predicted strong social self-esteem. Family adaptability, amount of time left in the care of others during childhood, birth order, and gender were no significant predictors. Positive self-esteem is indicative of a positive and integral personal and social identity.<sup>30</sup>

Physical activity is the common feature between yoga and physical exercise while yoga includes several mental techniques apart from physical activity.<sup>32</sup> The practice of breathing exercises, pranayama, and the systematic breathing during *asanas* regulates the

breathing mechanisms, trains the abdominal and chest muscles, and also improves the vital capacity and stamina.<sup>33</sup> Physical activity is positively associated with self-esteem and it is an important part in yoga practice (*asanas*). Many researchers have reported the strong relationship of participation in physical activity with self-esteem.<sup>34</sup> A study demonstrated that physical activity had a positive relationship with self-esteem and a negative relationship with BMI. The analysis revealed that both males and females who were more physically active had considerably higher levels of self-esteem.<sup>35</sup> Engaging in physical activity has a positive impact on mood and self-esteem.<sup>36</sup> Physical activity can improve self-image, self-confidence, relieve stress and tension, increase alertness, energy, and reduce loneliness, shyness, hopelessness and ability to cope with stress.<sup>37</sup> Yoga includes techniques which are more than physical activity and influence the mental state.

According to Temmi Sears (Director of Yoga Buds; www.yogabuds.com), 'the primary benefit of yoga is enhanced self-esteem' {as cited in Peters, 2003}.<sup>38</sup> Yoga may help teenagers to learn about their body and discover what their strengths and limitations are. Yoga allows teenagers to visualize, relax and enter a noncompetitive environment.<sup>39</sup> Self-esteem requires a self-evaluation process in which individuals compare their description of themselves with their real self.<sup>40</sup> Yoga practices reduce anxiety through relaxation and hence induce a general feeling of well-being.<sup>41</sup> Slow and deep breathing is known to increase the parasympathetic tone and is associated with a calm mental state.<sup>42</sup> This way yoga tries to correct the basic limitations of the mind by improving self-awareness, self-control, and self-esteem.<sup>43</sup>

In a deeper sense, yoga teaches us about self-evaluation. After regular practice of yoga with systematic and balanced breathing, one can feel the closeness with oneself and feel the distance from external distracters. This self-evaluation is important because the subject is able to assess what they know, what they don't know and what they would like to know. They begin to recognize their own strengths and weaknesses, and will be able to set goals that they know they can attain with the new knowledge they have about themselves.<sup>44</sup>

Physical activity and yoga also separately improved emotional wellbeing in youth.<sup>23,45</sup> The mechanisms underlying these benefits have not been clearly worked out and may involve complex neurochemical changes and modified functioning of brain areas within the limbic circuit. These are possible areas for future study.

Yoga and physical exercise both had resulted in positive effects on self-esteem in school children after a thirteen month follow-up. Regular practice of yoga was also found beneficial to improve self-esteem when practice unsupervised. This study demonstrated that physical activity in all forms including yoga is beneficial for preadolescent self-esteem. A systematic review suggests the important effects of yoga-based interventions at school, but future research requires greater standardization specifically in terms of the frequency and duration of the yoga practice.<sup>46</sup>

The limitations of this follow-up study are:

- i. The sample size was small.
- ii. There was no attempt to understand the factors which determined why some children continued to practice while others stopped the practice. These are possible directions for future study which would help to understand the factors which motivate children to practice yoga, which would help in designing yoga programs.

## Acknowledgements

The original research was funded by the Central Council for Research in Yoga and Naturopathy, Dept. of AYUSH, New Delhi. The authors gratefully acknowledge the help of Late K.B. Chaudhary (Principal of Doon Public School, Haridwar, India), and Mr. Ankur Kumar (Yoga Teacher) for their assistance in the study.

## Conflicts of interest

Author declares there are no conflicts of interest.

## Funding

None.

## References

1. Baron R, Byrne D. Social Psychology: understanding human interactions. Boston, USA: Allyn & Bacon; 1991. p. 584.
2. Maslow AH. Motivation and Personality. New York, USA: Harper & Row; 1987. p. 1–8.
3. Preventing Suicide. A resource for teachers and other school staff, WHO, Geneva. 2000.
4. Dalgas-Pelish P. Effects of a self-esteem intervention program on school-age children. *Pediatr Nurs*. 2006;32(4):341–348.
5. Young EL, Hoffmann LL. Self-esteem in children: strategies for parents and educators. Handouts for Families and Educators from National Association of School Psychologists. USA: NASP Publications; 2004.
6. Sharma V, Srivastava S, Malhotra S, et al. Yoga and cognitive behavior techniques for academic stress and mental wellbeing among school students. *Delhi Psychiatry Journal*. 2010;13(1):75–78.
7. Garcia DM. The transactional model of stress and coping: Its implication to young adolescents. Ph.D. thesis University of Denver, USA. 1986.
8. Raina MK. Biochemical consequences of examination stress. *Indian Educ Rev*. 1983;18:17–25.
9. Gupta J. An exploratory study on some aspects of high academic stress and symptoms in 12-15 years old students. *M. Sc. Dissertation*. Chandigarh, India: Punjab University; 1989.
10. Alghamdi S, Manassis K, Wilansky-Traynor P. Self-perceptions in relation to self-reported depressive symptoms in boys and girls. *J Can Acad Child Adolesc Psychiatry*. 2011;20(3):203–207.
11. Krishnakumar P, Geeta MG. Clinical profile of depressive disorder in children. *Indian Pediatr*. 2006;43(6):521–526.
12. Butzer B, Ebert M, Telles S, et al. School-based Yoga Programs in the United States: A Survey. *Adv Mind Body Med*. 2015;29(4):18–26.
13. Hagen I, Nayar US. Yoga for Children and Young People's Mental Health and Well-Being: Research Review and Reflections on the Mental Health Potentials of Yoga. *Front Psychiatry*. 2014;5:35.
14. Telles S. Effect of yoga on mental health in children. In: Nayar US (eds.), Child and Adolescent Mental Health. SAGE Publications India Pvt Ltd, New Delhi, India. 2012. p. 219–226.
15. Chen TL, Mao HC, Lai CH, et al. The effect of yoga exercise intervention on health related physical fitness in school-age asthmatic children. *Hu Li Za Zhi*. 2009;56(2):42–52.
16. Naveen KV, Nagarathna R, Nagendra HR, et al. Yoga breathing through a particular nostril increases spatial memory scores without lateralized effects. *Psychol Rep*. 1997;81(2):555–561.
17. Raghuraj P, Telles S. A randomized trial comparing the effects of yoga and physical activity programs on depth perception in school children. *Journal of Indian Psychology*. 2003;21:54–60.

18. Bhardwaj AK, Agrawal G. Yoga practice enhances the level of self-esteem in pre-adolescent school children. *International Journal of Physical and Social Sciences*. 2013;3(10):189–199.
19. Yoo YG, Lee IS. The effects of school-based Maum meditation program on the self-esteem and school adjustment in primary school students. *Glob J Health Sci*. 2013;5(4):14–27.
20. Bhardwaj AK, Agrawal G. Gender difference in pre-adolescents' self-esteem. *International Journal of Social Sciences and Interdisciplinary Research*. 2013;2(8):114–119.
21. Telles S, Singh N, Bhardwaj AK. Effect of yoga or physical exercise on physical, cognitive and emotional measures in children: a randomized controlled trial. *Child Adolesc Psychiatry Ment Health*. 2013;7(1):37.
22. Ortega FB, Ruiz JR, Castillo MJ, et al. Physical fitness in childhood and adolescence: a powerful marker of health. *Int J Obes (Lond)*. 2008;32(1):1–11.
23. Hartmann T, Zahner L, Pühse U, et al. Effects of a school-based physical activity program on physical and psychosocial quality of life in elementary school children: a cluster-randomized trial. *Pediatr Exerc Sci*. 2010;22(4):511–522.
24. [http://articles.economicstimes.indiatimes.com/2011-02-06/news/28424975\\_1\\_middle-class-households-applied-economic-research](http://articles.economicstimes.indiatimes.com/2011-02-06/news/28424975_1_middle-class-households-applied-economic-research)
25. Kumar A. Manual for Indian Adaptation of Battle's Self-Esteem Inventory for Children. Varanashi: Prasad Psychological Corporation, India. 1988.
26. Rosenberg M, Schooler C, Schoenbach C, et al. Global self-esteem and specific self-esteem: different concepts, different outcomes. *Am Sociol Rev*. 1985;60(1):141–156.
27. Battle J. Culture-free and self-esteem inventories. 2nd edn. examiner's manual. Texas, USA: Austin;1992.
28. Gecas V, Schwalbe ML. Parental Behavior and Adolescent Self-Esteem. *J Marriage Fam*. 1986;48(1):37–46.
29. Coopersmith S. The Antecedents of self-esteem. WH Freeman, San Francisco, USA. 1967.
30. Coetzee M, Martins N, Basson JS, et al. The relationship between personality preferences, self-esteem and emotional competence. *SA J Ind Psychol*. 2006;32(2):64–73.
31. Gorbett K, Kruczek T. Family Factors Predicting Social Self-Esteem in Young Adults, *The Family Journal*. 2008;16(1):58–65.
32. Taimini IK. The Science of Yoga. The theosophical publishing house, Madras, India. 1986.
33. Nagendra HR, Nagarathna R. Application of integrated approach of yoga: A review. *Yoga Review*. 1983;3:173–194.
34. Gruber JJ. Physical activity and self-esteem development in children: a meta-analysis. In: Stull GA, Eckert HM, (Eds.), Effects of Physical Activity on Children, IL: *Human Kinetics*, USA. 1986. p. 30–48.
35. Tremblay MS, Inman JW, Willms JD. The relationship between physical activity, self-esteem, and academic achievement in 12-year-old children. *Pediatr Exerc Sci*. 2000;12(3):312–323.
36. [http://www.staps.uhpncancy.fr/sport&mental\\_health.htm](http://www.staps.uhpncancy.fr/sport&mental_health.htm)
37. Page RM, Tucker LA. Psychosocial discomfort and exercise frequency: An epidemiological study of adolescents. *Adolescence*. 1994;29(113):183–191.
38. Peters D. Flextime. *Today's Parent*. 2003;20(3):110.
39. Bridges KA, Madlem MS. Yoga, physical education, and self-esteem: off the court and onto the mat for mental health. *Calif J Health Promot*. 2007;5(2):13–17.
40. Power FC, Khmelkov VT. Character development and self-esteem: Psychological foundations and educational implications, *Int J Educ Res*. 1998;27(7):539–551.
41. Kozasa EH, Santos RF, Rueda AD, et al. Evaluation of Siddha Samadhi Yoga for anxiety and depression symptoms: a preliminary study. *Psychol Rep*. 2008;103(1):271–274.
42. Kaushik RM, Kaushik R, Mahajan SK, et al. Effects of mental relaxation and slow breathing in essential hypertension. *Complement Ther Med*. 2006;14(2):120–126.
43. Nagendra HR. Yoga, Its basis and applications. 3<sup>rd</sup> edn. Bangalore, India: Vivekananda Kendra Yoga Prakashan; 1996.
44. <http://www.ndt-ed.org/TeachingResources/ClassroomTips/Self-evaluation.htm>
45. Mendelson T, Greenberg MT, Dariotis JK, et al. Feasibility and preliminary outcomes of a school-based mindfulness intervention for urban youth. *J Abnorm Child Psychol*. 2010;38(7):985–994.
46. Ferreira-Vorkapic C, Feitoza JM, Marchioro M, et al. Are There Benefits from Teaching Yoga at Schools? A Systematic Review of Randomized Control Trials of Yoga-Based Interventions. *Evid Based Complement Alternat Med*. 2015;2015:345835.