Effect of regular yoga lessons in school on the mental health status of adolescents: An observational study

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Abstract

Background: The mental well-being of adolescents is essential for appropriate physical, emotional, social, cognitive and educational development. Yoga is an effective way of channelizing all energy into positivity and helps in regulating one's mind and consists of asanas, pranayama, and meditation.

Aim: To study the impact of regular yoga lessons on mental health status of adolescents in schools.

Materials and Methods: This observational study was done among children of 2 schools situated in urban Bagalkote. 100 students who were taking regular yoga classes and another 100 who were not taking yoga classes were considered. A validated questionnaire primarily designed to assess the mental health of children and adolescents, known as Strength and difficulties questionnaire was used for the study. The two groups were compared using Chi-square test and Student's t test using SPSS version 16.

Results: There were more number of students in School 1 who scored less (=0) on conduct scale and peer problem scale (less score indicates better mental health) than in School 2. There were more number of students in School 1 who scored more (6+) on pro-social scale (more score indicates better mental health) than in School 2.

Conclusion: Yoga is effective in improving the mental health in terms of better behaviour and decreased stress.

Key words: Yoga; adolescence; mental health

Introduction

Adolescence is a transitional period that changes a person in all dimensions and prepares him/her for adulthood. Biological, psychological and social development of the individual is highly important in order to tackle the various pressures of the world around him/her and internalization of ethical principles and control of conduct.

The mental well-being of adolescents is essential for appropriate physical, emotional, social, cognitive and educational development. In India, 10% of 5-15-year-old children have a diagnosable mental health disorder. There are up to 20 million adolescents with severe mental health disorder, and around 90% of children with mental health disorder are not currently receiving any specialist service[1]. The common disorders in the age group of 12-16 years are psychosis, hysterical neurosis, and conduct disorders. Psychoses and conduct disorder cases are significantly more among males while hysterical neurosis cases are more common among female children[2]. Studies show a substantial increase in adolescent conduct problems over 25-year study periods that has affected males and females, all social classes and all family types. There was also evidence for a recent rise in emotional problems, but mixed evidence in relation to rates of hyperactive behaviour[3]. In today's digital era, there is a lot of scope for unnecessary distractions and antisocial behaviour when they are not properly monitored. Peer pressure, high risk and violent behaviour, suicidal tendencies are all alarming concerns that need to be addressed. Most adolescents rebel their parents at this age and it's very difficult to get them to see what's right and wrong.

Yoga is an effective way of channelizing all energy into positivity and helps in regulating one's mind

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and consists of asanas, pranayama, and meditation. Improvement in various psychological parameters like reduction in anxiety and depression and a better mental function was noted after yogic practices[4]. In this regard, implementing Yoga lessons in school, where they are taught to channel their mind in the right direction is a great way to mould their mental and emotional wellbeing. Such activities at school promote strong peer behaviour and communications as well.

As there are a very few studies conducted on mental health in adolescents in the region of North Karnataka, this study was taken up to know the effect of regular yoga lessons on the mental health status of adolescents with the following objectives: To assess the mental health of adolescents (10-19 years), who perform yoga regularly and those who do not perform yoga regularly in a school; to compare scores of the two groups and analyse the impact of regular yoga lessons on the mental health of the adolescents.

Materials and Methods

This observational study was done among children of 2 schools situated in urban Bagalkote. A total of 200 subjects from class 5 to 10 selected were included in the study, 100 students who were taking regular yoga classes were considered as study group and another 100 subjects who were not taking yoga classes were considered as the control group.

Inclusion criteria: All students aged 10-19 years, whose parents/guardian consented for the study, who were practicing Yoga regularly (asanas, pranayama and meditation, for 40 minutes) for more than 6 months were included in the study group (90 students). Age and gender matched students who did not practice Yoga were included in the control group (89 students).

Exclusion criteria: All students aged 10-19 years, whose parents/guardian did not consent for the study, were excluded.

Study protocol: Ethical clearance was obtained from the institutional ethics committee. Informed consent was taken from the head of the institution and the parents/guardians of the students. The objectives of the study were explained to the students. A proforma revealing the age, gender, height, weight, and any present or past illnesses was filled-up. A validated questionnaire primarily designed to assess the mental health of children and adolescents, known as Strength and difficulties questionnaire[5], was used for the study of which the self- report version for youth (YR1) was administered to all the students, both in the study as well as control groups. The questionnaire was collected back and scoring done. The questionnaire explains the peer relationships, classroom learning, home life, friendships, and leisure activities of the pupil for the last six months. Analysis was done for emotional, conduct, hyperactive and peer problem observed in the scale and also by calculating the total difficulties score which is the sum of emotional, conduct, hyperactive and peer problem scales. These were later interpreted using the standard values and the two groups were compared using Chi-square test and Student's t test using SPSS version 16.

Results

A total of 179 students, 90 from one school (School 1) where yoga was practised regularly and 89 from another school (School 2) where students were not practising yoga were finally included. There were 75 boys and 15 girls in School 1 whereas 56 boys and 33 girls in School 2 .The mean age in years of students belonging to School 1 was 13.57±1.44 and that in School 2 was 13.79±1.57. The mean duration of physical activity of students in minutes per day was 96.67±52.740 in School 1 and that in School 2 was 103.48±83.027. The mean duration of yoga practice of students in minutes per day was 48.83±17.240 in School 1 and that in School 2 was 17.98±28.140.

Table 1: Comparison of conduct scale in the two schools

Conduct scale	School 1 (Yoga group)	School 2 (Non-yoga group)	Total
<= 0	12	7	19
1 - 4	58	55	113
5+	20	27	47
Total	90	89	179

Chi-square test: $X^2 = 2.43$; df = 2; p = 0.296

Table 2: Comparison of peer problem scale in the two schools

Peer problem scale	School 1 (Yoga group)	School 2 (Non-yoga group)	Total
<= 0	8	7	15
1 - 4	64	70	134
5+	18	12	30
Total	90	89	179

Chi-square test: $X^2 = 1.53$; df = 2; p = 0.465

Table 3. Comparison of pro-social scale in the two schools

Pro-social scale	School 1 (Yoga group)	School 2 (Non-yoga group)	Total
<= 0	0	1	1
1 - 5	8	8	16
6+	82	80	162
Total	90	89	179

Chi-square test: $X^2 = 1.019$; df = 2; p =0.601

Table 4: Comparison of total difficulty scores in both schools

Total difficulty score	School 1	School 2	Total
<= 15	69	70	139
16 - 20	14	15	29
21+	7	4	11
Total	90	89	179

Chi-square test: $X^2 = 0.854$; df = 2; p = 0.652

There were more number of students in School 1 who scored less (=0) on conduct scale (Table 1) and peer problem scale (less score indicates better mental health) than in School 2 (Table 2). There were more number of students in School 1 who scored more (6+) on pro-social scale (more score indicates better mental health) than in School 2, as shown in Table 3, but they were not statistically significant.

There were marginally more number of students in School 2 who had a total difficulty score of <=15 (less score indicates better mental health), although not statistically significant (Table 4).

Discussion

The results of the present study indicate that regular practice of yoga will benefit the mental health of the adolescents. It has improved the conduct of the students and they would face less of peer problems. They also cultivate pro-social behaviour. These findings are consistent with the findings of previous studies - Of the 35 trials conducted, 25 showed a significant decrease in the anxiety and/stress levels, when yoga was implemented, says a review article[6]. Total mood disturbance improved in yoga students and worsened in controls, in a US-based study. Negative affect significantly worsened in controls while improving in yoga students, and the students rated yoga fairly high[7]. Yoga helps in improving the mental status, especially decreased anxiety during stress, as observed in normal subjects by Udupa et al[8], Malathi et al[9-11] and Ray et al[12].

Yogic exercise involves physical, mental and spiritual task in a comprehensive manner. It brings about behavioural changes[13]. Static postures of yogasanas and controlled rhythmic breathing of pranayamas involve minimal bodily movements and result in maximal physical and mental relaxation[14]. The proprioceptive involvement in a well co-ordinated fashion with mentally relaxed state in the yogic practices helped the subjects to achieve the improvement of psychological and psychomotor components. The improvement in physiological and psychological functions, improved the feeling of subjective mental well-being[12]. Stress is known to modulate the activity of autonomic nervous system and central nervous system, in a way, as to cope with stress to get adapted to it. In stressful states with preponderance of sympathetic activity, yogic asanas and pranayama can lead to a state of reduced sympathetic activity shifting the autonomic balance towards relative parasympathetic dominance[15].

The limitations of the present study would be its small sample size for which the results may not have been statistically significant and also the quality and adherence to the yoga practice remains to be monitored. Further research is needed in this regard. Results of the present study would help in highlighting benefits of regular Yoga practice in improving the mental health of adolescents, and thereby the health of society and the nation. Yoga practice when left to the decision of the adolescent will result in lack of motivation and compliance. It will be highly beneficial when practised with the peer group. Hence, Yoga lessons may be given more emphasis in formulating the school curriculum in order to decrease mental health disorders in adolescents and significantly improve their overall quality of life.

Conclusion

Yoga is effective in improving the mental health in terms of better behaviour and decreased stress that are essential components of decision making and developing a sense of identity during adolescence.

Recommendations

Yoga practice when left to the decision of the adolescent will result in lack of motivation and compliance. It will be highly beneficial when practised with the peer group. Hence, Yoga lessons may be given more emphasis in formulating the school curriculum in order to decrease mental health disorders in adolescents and significantly improve their overall quality of life.

Acknowledgements: We acknowledge the students, teachers and parents for their support in the present study.

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Conflict of interest: Nil
Source of funding: Nil

Date received: Jan 06, 2022
Date accepted: May 14, 2022