Application of mindfulness on stress, anxiety, and well-being in an adolescent student: A case study

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Background: Stress and anxiety are the major problems students face in their lives and specifically in their academic life, which, in turn, has a significant negative impact on their academic performance. There are different approaches to deal with stress and anxiety, for example, cognitive behavioral therapy and relaxation techniques. Objective: The present study was conducted to evaluate the applicability of mindfulness on stress, anxiety, and psychological well-being in an adolescent student. Methods: In this study, single-case study design was used. The Pediatric Symptoms Checklist, Youth Self-Report, Institute of Personality and Ability Testing Anxiety Scale, and Checklist of Psychological Well-Being were administered on ten adolescent students. After the initial assessment, one participant was selected who was having significant level of stress, anxiety, and poor psychological well-being. Further detailed assessment was done using the Raven Standard Progressive Matrices, Parents’ Observation Checklist, Teachers’ Observation Checklist, and Students’ Self-Observation Checklist. The student underwent 24 sessions of mindfulness training with a frequency of three sessions in a week. After completion of sessions, post assessment was done. He was re-assessed after 3 months. Results: After completion of mindfulness training, improvement was observed in stress, anxiety, well-being, and other variables, and the improvement was maintained till follow-up. Conclusion: Mindfulness training has the potential in effectively reducing stress and anxiety and increasing a sense of well-being, but the major barrier is getting fixated with an idea of what’s the right way to do mindfulness and feel it. Keywords: Adolescents, anxiety, mindfulness, stress, well-being

Many studies have established a causal relationship between stress, anxiety, and psychological well-being on adolescent students. Adolescence has long been regarded as a group of people who are for themselves to find some form of identity and meaning in their lives. Adolescence is the most vulnerable age for development; when a child once enters this stage requires intensive readjustment to school, social, and family life. The World Health Organization has reported about psychiatric morbidity in the range between 14.4% and 31.7% in Indian adolescents. The percentage of symptoms of depression, anxiety, and stress was 18.5%, 24.4%, and 20%, respectively. The comorbidity of anxiety and depression was found 87% in the adolescents. Suicidal behaviour and poor psychosocial functioning such as poor academic performance were found.

Hans Selye, the father of stress theory, defined stress as “The nonspecific response of the body to any demand made upon it.” Stress is the reaction people have to excessive pressure or other types of demand placed upon them. It arises when they worry that they cannot cope. Stress is associated with emotional states, self-esteem, and subjective health complaints.

Anxiety is one of the most common psychological disorders in school-aged children and adolescents.

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Anxiety is feeling unrealistic fear, worry, and uneasiness, usually generalized and unfocused. Adolescence is often accompanied by restlessness, fatigue, problems in concentration, muscular tension, and other somatic complaints due to anxiety.

Shek defines psychological well-being as that “state of a mentally healthy person who possesses a number of positive mental health qualities such as active adjustment to the environment, and unity of personality”. Adolescence can definitely be looked upon as a time of more struggle and turmoil than that during childhood. It has been established that factors such as school connectedness, good relationships with others, liking family and peers, closeness to others, physical activity, or healthy eating habits can protect young people and increase their psychological well-being.

Mindfulness-based interventions is an old concept and well established. It is most firmly rooted in Buddhist Psychology of mindfulness. The term “mindfulness” is derived from the “Pali” language word “sati,” meaning to remember, but in terms of consciousness, it commonly signifies presence of mind. It concerns a clear, nonconceptual, nondiscriminatory awareness of one’s inner and outer worlds, including thoughts, emotions, actions or surroundings, and sensations and can be considered an enhanced attention to and awareness of the current experience or present reality, i.e., the awareness of being aware. Well-conducted mindfulness interventions have been known to improve adolescents’ well-being; reduce worries, anxiety, distress, reactivity and bad behavior; improve sleep and self-esteem; and bring about greater calmness, relaxation, and self-regulation and awareness.

Methods

Sample

The sample of the present study consisted of one adolescent student with average intelligent quotient level. He had no comorbid psychiatric, neurological, or medical illness.

Case Report

Mr. R. K., a 15-year-old, single, Hindu, Hindi-speaking male, belonging to lower middle socioeconomic status, of nuclear family, hailing from an urban area of Jharkhand, was studying in the 9th class. His father was a farmer and mother was a homemaker. There were five members in the family. Relationship among the family members was satisfactory. He frequently changed 5–6 different schools till the 7th class and joined high school. The high school was too far from his residence. Hence, his father suggested him to stay at his sister’s place (Mr. R K’s aunty) where he had difficulty in adjustment. In the high school, his performance was poor. Still most of the time, he focused on studies and was trying to work hard, but did not get satisfactory outcome. He was not that much involved with friends. He aspired to become a teacher and wanted to be financially strong in future.

Presenting problem

In the middle childhood, he changed his school 5–6 times; as a result, his academic performance decreased. His family income was not sufficient to provide him quality and good education. His father was not confident in RK’s abilities. Because of his father’s attitude, he was disappointed and started worrying about his studies and his future. He was unable to enjoy the things he used to and would be afraid of new situations. He had problems in concentration. He wanted to be with his parents more than before. He was also having adjustment problems at his aunt’s home. His motivation was low, and most of the time, he was apprehensive about studies and examination. His friends would also tease him for his highly disciplined behaviors. He would try hard, but his efforts were not paying off. His performance was poor in some subjects, whereas in others it was satisfactory.

For assessment, the following tools were used:

1. Sociodemographic and clinical data sheet: A semi-structured pro forma was prepared by the researcher to collect information about the sociodemographical variables such as age, language, education, religion, and illness
2. Raven’s Standard Progressive Matrices (RSPM): It is a nonverbal, single and group administered intelligence test. It is used to measure intelligence of 5-year-olds to the elderly. This test consists of sixty multiple-choice questions (five sets [A to E] of 12 items each), listed in order of difficulty. Its reliability has found to be 0.88–0.93 with higher values
3. Pediatric Symptoms Checklist, Youth Self Report (Y-PSC): There are 35 items in Y-PSC. These items are designed to faceplate the recognition of physical, cognitive, emotional, and behavioral problems. The test–retest reliability of the PSC ranges from $r = 0.84$ to $0.91$, with a cutoff score of 28, a specificity of 0.68, and a sensitivity of 0.95 for measuring psychosocial dysfunction of adolescence due to stressors
4. Institute of Personality and Ability Testing Anxiety Scale (IPAT): It includes 40 items and five factors (appraisal apprehension and tension are dominant factors in this scale, and other factors include emotional instability, suspiciousness, and lack of self-control). The average test–retest reliability coefficient across the test is 0.82. The Anxiety Scale has correlated moderately high with clinical ratings \((r = 0.49)\), and it also correlates strongly with other popular measures of general anxiety \((r = 0.70)\) with the Taylor Manifest Anxiety Scale and \(r = 0.76\) with the Spielberger Trait Anxiety Inventory.

5. Checklist for Psychological Well-Being. This checklist is developed by Pundeer et al.\[29\] in 2013 at RINPAS to measure the psychological well-being of adolescents (13–16 years). This checklist consists of 18 items which measure six domains of psychological well-being. In this checklist, the students are expected to read carefully all statements which are related to their experience and feeling during the last 1 month.

6. Student’s Self-Report Checklist: This checklist was prepared by the researcher for the secondary students. It has two other forms, i.e., Parents’ Observation Checklist (POC) and Teachers’ Observation Checklist (TOC). All the three forms are used in this case study. These checklists consist of 20 items. They measure the personal daily activity, academic activity and performance, physical health and sports, social and family health, and emotional stability. The scoring of this checklist involves three-point rating, i.e., often (score 2), sometimes (score 1), and never (score 0) for positive statements, whereas reverse scoring is used for negative statements. These checklists were made with the help of ten mental health professionals and research committee of RINPAS, Kanke, Ranchi.

**Package and procedure**

**Package of mindfulness training**

In the present study, the content of the intervention was based on formal and informal exercise of mindfulness: body scan, breathing, and thought observation were included under mindfulness formal exercise.

1. **Introductions:** As a cognitive conceptualization of stress, anxiety, and psychological well-being

2. **Formal exercise:** Mindfulness body scan, mindfulness breathing exercise, and mindfulness meditation (thought observation)

3. **Informal exercise:** Mindfulness in daily routine and domestic chores and others.

Approximately 24 sessions of mindfulness training with a frequency of three sessions in a week was given to the participant. Out of these 24 sessions, the initial two sessions were devoted to the introduction and psycho-education about stress, anxiety, and psychological well-being, i.e., how they affect our daily life functioning, how are they developed, and how they can be managed. Detailed information was given about the mindfulness formal and informal exercises. During the 3rd and 4th sessions, the participant was demonstrated the mindfulness formal exercises. After demonstration, one training session was given for formal exercise and after this, regular practice was started. He was trained and told to practice the same in the morning and evening at home as homework. Before beginning a new session, he was asked about the homework and if any problem was found, it was sorted out and any doubts were rectified. After each session, feedback was taken from the participant about any changes in his feelings and thoughts, and feedback was given to him about his success in performing the different mindfulness exercises. At the end of each session, he was assigned homework.

**Method of formal exercise**

The participant was asked to take a particular posture, a dignified posture that suggests that we are doing something important. He was made to sit in a comfortable posture on a mat on the floor. After attaining the comfortable posture of sitting, the participant was asked to close his eyes gently. Then, awareness is brought to the level of physical sensations by focusing own attention on the sensations of touch and pressure in the body where it makes contact with the floor. After this, he was instructed to explore these sensations for a minute or two and then body scanning was started. In the body scan, he was instructed first with demonstration and then without demonstration to visit each part of his own body, starting from the lower parts and progressing toward the upper part of the body such as the toe, foot, angle, shin, calf, knee, thigh of the right leg and then visit left leg followed by stomach, chest, both hands, shoulder, neck, mouth, cheek, eyes, and forehead (approximately 10 min). The aim of this exercise was to relax the body and after achieving relax state, he was moved in the breathing exercise. He was asked to simply observe breathing sensations as one was experiencing at the time of deep breathing by selecting some part of the breath cycle and paying attention to it as fully as possible. He was instructed to take breath slowly and to feel the touch of the breath as it passes in through the nostrils, trachea, and pharynx or the cool sensation of the breath above the roof of the mouth or, more usually, the expansion and contraction of the lungs and abdomen. After 10 min of breathing exercise, he was moved in the mindfulness meditation (thought observation). In this meditation, he was asked to observe his own thoughts and feelings from a distance, without judging them good or bad and where one had to notice the thoughts that were passing through one’s mind. Apart from this, he had to notice the feelings that were passing through his own body. He was instructed...
to observe those thoughts and feelings without judging them as good or bad, and without trying to change them, avoid them, or hold onto them (approximately 10 min).

**Informal exercise**

He was asked to pick an activity and do it mindfully of the routine works such as brushing the teeth, bathing, clothing, eating, and bicycling. He was instructed to totally focus on what he is doing: the body movements, the taste, the touch, the smell, the sight, the sound etc., to feel every touch of every movement.

**Procedure**

Initially, ten students from St. Joseph's High School Ranchi, Jharkhand, were selected for assessment by using Y-PSC, IPAT, and Checklist of Psychological Well-Being (CPWB). After the initial assessment, one participant was selected who was having significant level of stress, anxiety, and poor well-being. He had not undergone any psychotherapeutic intervention for stress and anxiety. Further detailed assessment was done using the RSPM, Student’s Self-Observation Checklist (SOC), POC, and TOC. Duration of intervention was kept for 24 sessions (three sessions in a week with duration of 45 min of each session).

After completion of sessions, post assessment was done after a gap of 5 days with the help of the same tools which had been used earlier. The student was re-assessed after 3 months. This present research program was approved and reviewed by the Protocol Review Committee and Ethics Committee of Ranchi Institute of Neuro-Psychiatry and Allied Sciences, and the mindfulness training was taken by an expert professor in yoga and philosophy. Before the intervention, formal permission was taken from the administration of school and consent was taken from parents.

**Analysis of data**

In the present study, scores were obtained by simple mathematical tools including addition and subtraction as well as comparing method. On Y-PSC, a score of 21 indicates mild-level psychosocial impairment. High score was obtained on emotional area. The main features include afraid of new situations, irritability, worries, want to be with parents more than before, feeling hopelessness, feel that he is bad, doesn’t show feelings, has little energy, and gets distracted easily. On the IPAT, his score was 42 that indicates high level of anxiety. The main features include apprehension, insecurity, self-reproaching, worrying, troubled, uncontrolled, frustrated, and tensed. On CPWB, the score was 7, which indicates mild level of impairment with the features of unhappiness and low satisfaction. On the POC, the score was 14, which indicates mild level of impairment with the features of feeling anxious in study work, not interested in curricular activities, and irritability.

On the TOC, the score was 23, which indicates moderate level of impairment with the features including poor personal responsibility, work is not done in a positive way, feeling anxious in study work, carelessness, not interested in curricular activities, and irritability. On the SOC, the score was 12, which indicates mild level of impairment with the features of feeling anxious in study work, not interested in curricular activities, and irritability.

**RESULTS**

After completing 24 sessions, post test was administered, measuring many parameters, and the findings are presented in Table 1. The analysis indicates that significant level of improvement occurred in all variables. The participant’s score on the YPSC was 21 and after therapy, the score lowered down to 8, indicating improvement in emotional, behavioral, and physical symptoms of psycho-social functioning and follow-up score revealed that the therapeutic outcome was maintained in the areas of emotional and psychosocial functioning, whereas in behavioral domain, there was a slight decline. On IPAT, the score was 42 as found in preassessment, and his score improved to 23 on postassessment; the follow-up score showed that the therapeutic outcome was maintained. He also showed improvement in overall psychological well-being after therapy sessions and the therapeutic outcome was maintained till follow-up. His psychological well-being score in preassessment was 7, whereas the score in posttherapy assessment was 2 and on follow-up was 1. Similarly, on observation checklists, his score improved in all the three Forms, that is, parent, teacher, and self-observation forms. Major improvement was found in the self-observation form and psychological well-being and the therapeutic outcome was maintained in all the three areas.

By the end of the 3rd week session, some improvement was seen in concentration. He told, now I am able to much concentrate in the classroom than earlier as well as during home work and other activities. Gradually, his worrying...

| Tests          | Preassessment | Postassessment | On follow-up |
|---------------|---------------|----------------|--------------|
| IPAT          | 21            | 8              | 10           |
| Y-PSC         | 42            | 23             | 22           |
| CPWB          | 7             | 2              | 1            |
| POC           | 14            | 5              | 5            |
| TOC           | 23            | 15             | 16           |
| SOC           | 12            | 3              | 3            |

IPAT – Institute of Personality and Ability Testing Anxiety Scale; Y-PSC – Pediatric Symptoms Checklist, Youth Self Report; CPWB – Checklist of Psychological Well-Being; POC – Parents’ Observation Checklist; TOC – Teachers’ Observation Checklist; SOC – Students’ Self-Observation Checklist
attitude was changing. Over a period of 7 weeks, he started enjoying his daily activities. He could relate to every area of his personal life without becoming anxious. After the 15th session, his frequency of afraid of new situations decreased. He feels more energized and motivated. Overall, improvement was shown in terms of stress, anxiety, and well-being. Further, it resulted in positive self-observation in different domains of life, and he received positive evaluation from teachers and parents. The scores on follow-up showed that the therapeutic outcome was maintained on anxiety and psychological well-being in the POC and SOC, whereas a slight decline was noticed on the Stress and TOC.

**DISCUSSION**

Stress, depression, and anxiety all the negative indicators of mental health are significantly positively correlated.[21] Inadequate family environment of adolescents in terms of parental hostility, rejection, and inconsistencies can all contribute to psychological problems, namely, anxiety, stress, and depression.[22] Life without stress cannot be imagined and up to a certain limit may be adequate for personality development, but if noncongeniality prevails for a longer period, these stresses become too severe which may affect the psychic equilibrium, producing maladaptive patterns of behavior. Stress and anxiety are the offshoots of inadequate interaction with the environment, and family environment is the chief cause.[23]

In practicing mindfulness, one becomes aware of the current internal and external experiences, observes them carefully, accepts them, and allows them to be let go of to attend to another present moment’s experience.[24] The individual acquires control over his or her life by choosing to learn the mindfulness technique, to consistently practice it, and to apply it to daily life.[25] Mindfulness-based stress reduction is helpful in significant reduction of disassociative experiences and significant improvement in mindfulness in adolescents.[26]

The findings of the present study are consistent with the findings of a study that involved mindfulness-based cognitive behavioral therapy for the treatment of emotional problems (depression, anxiety, hopelessness, and perceived stress) in a sample of adolescents affected by HIV/AIDS. The analysis found preliminary support for mindfulness-based cognitive therapy as useful in reducing the symptoms of emotional disturbances on self and teacher reports to the levels of clinical significance and reliable change.[27] Another study studied the effects of a modified 8 week mindfulness-based program (MBP) course for 4–18 year olds peoples. When compared with a control group, the young people who received MBP reported significantly reduced symptoms of anxiety, depression, and somatic distress and increased self-esteeem and sleep quality.[28]

The present study findings are also in concordance with the findings of a study that investigated an MBP delivered by teachers, involving ten lessons and three times' daily practice of mindfulness meditation. Overall, there was a significant increase in scores on self-report measures of optimism and positive emotions. Teachers’ reports showed an improvement in social and emotional competence for children in the intervention group and a decrease in stress, aggression, and oppositional behavior.[29] Mindfulness-based therapy has the potential of providing effective treatment for emotional disturbances (stress, anxiety, and depression) in adolescents; further research is needed to test the efficacy of the intervention with a larger sample of such adolescents.[30]

**CONCLUSION**

Mindfulness is a type of meditation and exercise of awareness of self. The participant may control and improve his or her daily activities after learning the mindfulness skill. Mindfulness-based intervention is effective in reducing the level of stress and anxiety and developing life skills. It is difficult to understand the mindfulness practice, especially for secondary school students. However, mindfulness training is helpful in enhancing psychological well-being and reducing the emotional disturbance.

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**Conflicts of interest**

There are no conflicts of interest.

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