Yoga in Special Education classrooms

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**Introduction**

 There is a dramatic increase in the number of people who are diagnosed with autism spectrum disorders (ASD). It is estimated that one in 150 children are suffering from ASD and emotional and behavioral disorders (EBD). The emotional and behavior disorders in school-aged children show resistant to traditional special education approaches. Statistics from the World Health Organization show that the prevalence of these children with EBD in the United States is 12 to 13%. Disruptive behaviors are detrimental for children and young adults due to their serious personal, social, and educational implications. Breathing patterns are breathing rates linked to Anxiety Disorders. School-aged children are vulnerable to emotional and behavioral disorders along with autism spectrum disorders that can disrupt the breathing pattern and breathe rates in young adults. Yoga therapy is classified as a mind-body intervention, and it is often used as a corresponding tactic to boost the management of employees in the occupation. It is notable to mention that yoga has beneficial effects on mood, stress, anxiety, and physical and psychological well-being of a child and young adult. Here, the focus is to compare four pieces of literature to evaluate the effectiveness of yoga programs in school to combat autism spectrum disorders, emotional and behavior disorders, and anxiety disorders.

**Literature Review**

 It is noteworthy to mention that early interventions are crucial to the anticipation of various behavioral issues in children during their educational career. Powell, Gilchrist, and Stapley comprehensively discuss the effectiveness of the features of massage, yoga, and relaxation for children. The outcomes of the specific techniques of massage, yoga, and relaxation applied to young children are critically assessed to assess its impact on different emotional and behavioral difficulties. The prospect of yoga utilized as a tool of intervention to help children in dealing with different behavioral problems. The paradigm of Self-discovery Program (SDP) was developed by the experts to assist children when it comes to different behavioral and emotional complications especially related to all the hazards of primary and senior education. The theoretical perspective of SDP explained by the researchers is a beneficial form of information to provide necessary guidance to children related to their academic careers. The approach of self-discovery is played a central role to utilize different perceptions of capabilities positively. The idea of SDP is utilized to encourage children concerning different forms of relaxation techniques. Provision of necessary training about simple exercises such as hand massage and deep breathing helps children to align themselves with the main model of SDP. It is noteworthy to mention that controlled experimental design is used by the researchers of this study to make better inferences about the positive role of massage, yoga, and other relaxation techniques for children.

The controlled phenomenon was determinant by allocating children either in the form of intervention or control group concerning the elements of age and class. This particular study was conducted in four primary schools in England. Consideration of the sample is one mandatory feature of the research work. One hundred twenty-six children with the approach of Special Educational Needs (SEN), emotional, behavioral, or learning complications are selected as the sample for this research work. Expert services of three holistic therapists were utilized to effectively and efficiently delivered the SDP. Useful features of Self-discovery program also explained by the researches that better help to determine the effectiveness of activities of massage, and relaxation for the betterment of children. All 12 sessions of this particular program associated with various necessary domains such as senses, feelings, and entire well-being of children. The results of this study better help to make inferences about the effectiveness of SDP on the physical, psychological, and emotional development of children. The feedback of children about SDP is satisfactory as prominent positive changes were observed in the children. An increasing form of self-control and concentration skills are some prominent outcomes of the practical domain of SDP. The model of SDP is directly linked with the positive changes in the behavioral facets of children.

Koeing, Buckley-Reen, and Garg emphasize the efficacy of occupational therapy by using yoga for mitigating autism spectrum disorders (ASD). They indicate a 600 percent increase in the last two decades in ASD as stated by the Centers for Disease Control and Prevention (CDC). Their research aimed to examine the effectiveness of Get Ready to Learn (DRTL) program which uses certain relaxation and breathing exercises along with yoga postures to combat the behavioral issues among children. Koeing, Buckley-Reen, and Garg proposed a hypothesis regarding the efficiency of yoga in school-aged children to reduce stress level. They used a pretest-posttest control group design to evaluate the effectiveness of Get Ready to Learn (DRTL) program on challenging behavior of children diagnosed with ASD. Four classes were recruited at start per condition for a total of 48 students suffering from ASD. They used the Aberrant Behavior Checklist (ABC)-Community for assessing the disruptive behaviors of children. The GRTL program was implemented by Koeing, Buckley-Reen, and Garg in the school for 16 weeks. They used breathing exercises, deep relaxation (yoga nidra), chanting (kirtan), and certain physical postures for approximately 15 to 20 minutes. There were no significant differences in both the control group and intervention group in terms of age, ethnicity, and VABS-II scores. They have concluded the effectiveness of yoga therapy, as children in the intervention group show relatively less irritable behavior and noncompliance. Their study also demonstrates that changes in the behavior of the intervention group with ASD can be detected with the help of a psychometrically valid instrument.

 Naomi et al. performed a feasibility study to evaluate the effects of yoga in school-aged children with emotional and behavioral disorders (EBD). Children having EBD show symptoms of anxiety, depression, oppositional defiant disorder, and post-traumatic stress disorder. Naomi et al. identify the benefits of yoga training and exercise programs to enhance cardiac performance. Participants include the children of a 4th and 5th grade having age between 8 to 11. These participants are suffering from EBD including depression, hyperactivity, conduct disorder, anxiety, aggression, and attention difficulties. One hour session was given to these participants which include relaxation training, breathing techniques, yoga exercises, and postures, and imagery techniques and medications. Naomi et al. used “Behavior Assessment Scale for Children, Second Edition Teacher Rating Scale-Child” to mark the behavior of children. Average attendance for the yoga session was 90 percent. Their results indicate an improvement in the adaptive behavior of children and attendance in class. Their study concluded that regular yoga session enhanced blood circulation and reduced depressive symptoms, internalizing symptoms, and behavioral symptoms. The results suggest that implementing yoga sessions in school is feasible. As the behavior of participants was demanding due to EBD which made difficulties for a feasibility study. Naomi et al. also concluded that traditional classroom behavioral management interventions are not feasible to adjust the emotional and behavioral disorders of children. They emphasize that yoga is beneficial for small groups as it is an innovative technique to mitigate the symptoms of EBD in school-aged children. Managing large groups of students for yoga session is difficult. The results also include the remarks of teachers upon the yoga project. Significantly reduced behavioral symptoms and improved focus in class are indicated through yoga results. Naomi et al. indicated that yoga enables children with certain impairments to get an understanding of their emotional state with the help of well-rehearsed and practical techniques. It is found to enhance the self-control and concentration among children as it promotes relaxation and self-awareness.

 Jensen, Stevens, and Kenny evaluate the effectiveness of yoga nidra relaxation in controlling the respiratory patterns of children with disruptive behavior. This study examined the competency of yoga nidra in controlling the breathing pattern of children who showed comorbid conditions such as learning disorders and emotional disturbance. Disruptive behavior and anxiety disorders are associated with regulation of breathing patterns and breath rates. They included seven boys in the intervention group having age 10 to 15 years. Comparison data were collected from young adults having a mean age 15.2 years without disruptive behaviors. This program included 30 minutes session of yoga nidra practice. “Compumedic’s thoracic and abdominal Respiratory Inductive Plethysmography (RIP) and ‘‘Summit IP’’ software” was used to collect and analyze data. Variations in the patterns of breathing effort are displayed by using Polyman EDF + software which allows the researchers to examine visually breathing patterns. Jensen, Stevens, and Kenny hypothesized that yoga is beneficial to minimize the anxiety level of students and it will enhance the self-esteem levels along with improved classroom behavior. Results indicated by the STAIC and STAI show a significant reduction in the depression and anxiety level of children in the intervention group. General Linear Model was used to conduct the analysis. The regularity of both breath rate and amplitude made it easy to interpret the breath data for the comparison group. Pre-yoga nidra phase indicates irregular breathing rates, unequal inhalation, and exhalation lengths, and inconsistent amplitudes. Most of the participants show different durations of exhalation and inhalation. Jensen, Stevens, and Kenny demonstrate that participants have disruptive behavior show stabilizing rate and amplitude with relatively slow breath rate. They found that yoga nidra helps in consistent breathing patterns. They have concluded that yoga nidra expose students with high levels of aggressive behavior, to a relaxation experience. The participants were able to develop enhanced sensory awareness and were able to follow the instructions of a teacher through recognition of the somatic facet of the process of breathing. Jensen, Stevens, and Kenny's results indicate the predominance of abdominal breathing. In the pre-phase of yoga nidra, many participants having disruptive behavior showed irregular and chaotic breathing. Their results indicate a positive trend towards stabilized breath rate, breathing patterns, and regulated amplitude.

**Compare and Contrast**

According to Naomi et al. (2012), highly variable internalizing and externalizing symptoms are shown students with emotional and behavioral disorders. These symptoms include various psychiatric disorders such as depression, anxiety, oppositional defiant disorder, post-traumatic stress disorder, and conduct disorder. Naomi et al. proposed that disruptive behavior problems are associated with emotional and behavioral disorders (EBD) and decidedly associate with poor academic performance. Like Naomi et al., Koeing, Buckley-Reen, and Garg also suggest that children with autism spectrum disorders (ASD) present a unique challenge for classroom teacher due to their inability to effectively regulate their behavior in the classroom. In accordance with the findings of Naomi et al., Koeing, Buckley-Reen, and Garg emphasize that complex cognitive processes comprise at a very high level of emotional arousal or stress. They demonstrate that maintaining a calm, alert state is necessary in order to perform well in academic career.

 Yoga therapy is effective to address the various behavioral issue of school-aged children as it uses yoga postures, meditation, breathing exercises, and guided imagery to combat these issues. The holistic purpose of yoga is to integrate mind, body, and spirit to improve physical and psychological well-being. According to Jensen, Stevens, and Kenny, stress is a basic factor in behavioral problems as it causes a neurochemical switch to the posterior and subcortical region from the pre-frontal cortex of the brain which increases pulmonary function. Due to this, there is a significant increase in the blood pressure and heart rate results in decreasing the respiration rate. In accordance with Koeing, Buckley-Reen, and Garg’s research, Jensen, Stevens, and Kenny also found that the fight response in children with disruptive behavior is more frequently activated as compared to children without disruptive disorders. Atypical respiratory patterns endure where stress levels persist results in the creation of psychopathological conditions.

 Koeing, Buckley-Reen, and Garg concluded the effectiveness of yoga intervention with students as it significantly decreases the behaviors such as lethargy, hyperactivity, irritability, non-compliance, and social withdrawal. They suggest that occupational therapy with evidence-based yoga program must be adopted in schools due to their liability in improving behavior among children suffering from autism spectrum disorders. In accordance with Koeing, Buckley-Reen, and Garg, the results of Naomi et al. also justify the effectiveness of yoga to reduce the negative consequences of emotional and behavioral disorders. They concluded that relaxation training, breathing techniques, yoga exercises, and postures are beneficial to improve the adaptive behavior of children. Their results demonstrate the efficacy of a yoga session to enhance blood circulation and reduce depressive symptoms. Naomi et al. found that yoga exercises are effective in promoting relaxation, self-control, self-awareness, and concentration among children. In accordance with Naomi et al. the results of Koeing, Buckley-Reen, and Garg also indicate the efficiency of yoga in school-aged children to reduce the stress level. According to the results of Koeing, Buckley-Reen, and Garg, yoga therapy decreases the irritable behavior and non-compliance in children with autism spectrum disorders. They also conclude the usefulness of relaxation exercises to enhance positive behavior. Powell, Gilchrist, and Stapley exclusively highlight the effectiveness of yoga and massage in school-aged children. They emphasize the usefulness of yoga to help children dealing with different behavioral problems. Their results indicate the effectiveness of SDP on the physical and psychological development of children.

 Given the preceding procedural differences, it is hard to evaluate the reliability of the results. Jensen, Stevens, and Kenny used only 7 participants and concluded their results about the observations they had seen in them. It is notable to mention that the small size of the group is not liable to cover the overall group of school-aged children who are suffering from disruptive behaviors. Unlike Jensen, Stevens, and Kenny, the research conducted by Naomi et al. involves 160 students who give a liable result. Unlike Jensen et al., the results of Naomi et al., Koenig et al., and Powell et al. can be ambiguous as no significant results were found through parents' response that indicates the behavioral perspective.

**Conclusion**

 In a nutshell, yoga exercises and postures are effective in reducing disruptive behavior in school-aged children who are suffering from emotional and behavioral disorders. Yoga intervention shows a significant reduction in behaviors such as hyperactivity, social withdrawal, irritability, lethargy, and noncompliance. The results from various studies indicate the need for large, randomized yoga inventions in schools to mitigate the risk of behavioral problems. Occupational therapists need to introduce yoga program in various school as it is a valuable option to improve the behavior of children. SDP program is effective to help children regulate their behavior by finding their inner sanctum of stillness. The results concluded the reliability of yoga session and exercise with children to minimize the behavioral issues.