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Adolescent Yoga: Goals and Settings in Therapeutic Practice

by

Alison Roberts, B.S.

MSW Clinical Research Paper

Presented to the Faculty of the
School of Social Work

St. Catherine University and University of St. Thomas
St. Paul, MN

In Partial fulfillment of the Requirements of the Degree of

Master of Social Work

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The Clinical Research Project is a graduation requirement for MSW students at St. Catherine University/University of St. Thomas School of Social Work in St. Paul, Minnesota and is conducted within a nine-month time frame to demonstrate facility with basic social research methods. Students must independently conceptualize a research problem, formulate a research design that is approved by a research committee and the university Institutional Review Board, implement the project, and publicly present the findings of the study. This project is neither a Master's thesis nor a dissertation.

Abstract

Mindfulness practices, such as yoga, involve being fully present in the moment and practicing a non-judgmental acceptance of experiences. Among the last 10 years there has been an increased popularity of mind-body practices, but there is limited information examining how yoga is practiced by adolescents in therapeutic settings. The purpose of this systematic literature review was to answer how certified professionals use mind-body techniques, such as yoga and mindfulness, with adolescents and the intended goals. Synthesis of qualified articles revealed six common themes involving improved academic performance, stress, mood, emotional regulation, emotional intelligence and resilience. It is recommended to seek clarification and more significant findings regarding the correlation between participants' yoga practice and their GPA in future research. Professional practice will benefit by beginning to provide yoga on a regular basis and then assessing it.

Keywords: yoga, adolescents, therapeutic

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Background

Mindfulness practices have been shown to provide significant support and numerous benefits for mental and physical health in both children and adult populations. These benefits include less stress, increased self esteem, increased self concept, greater concentration, and improved relationships. Mindfulness involves being fully present in the moment and having non-judgmental acceptance of experiences. Mindfulness is an aspect of yoga that contributes to these benefits. Mind-body techniques, such as yoga, involve non-judgmental observing of what is occurring in the moment and self acceptance. There is an increasing trend of incorporating yoga as a mind-body complementary approach for both mental and physical health (Kaley-Isley, Peterson, Fischer, & Peterson, 2010).

Yoga involves physical postures and movement while incorporating breathing exercises, relaxation, self-observation without judgment and unifies the self at physical, emotional, cognitive, spiritual and social levels (Conboy et al., 2013). Yoga incorporates pranayamas, which focus on body awareness through controlled breathing exercises and balance the mental and emotional dimensions of an individual (Rocha, Riberio, Rocha, Sausa, Albuquerque, Riberio & Silva, 2012). There is evidence that a regular practice of yoga can be a positive influence in an adolescent's developmental skills (Felver, Butzer, Olson, Smith, Khalsa, 2015). However, while the evidence shows that yoga is helpful in the general population, research about how yoga may benefit the adolescent population, ages 11 to 19, is limited.

Adolescents balance spending time with friends, family, working, sports involvements, and additional obligations. This transitioning age group experiences

pressure and a feeling of uneasiness from both internal and external sources, affecting their stress level and ability to focus on the present. Furthermore, about 10% of adolescents are affected by Attention Deficit Hyperactivity Disorder (ADHD) (Burkley, 2016), and about 25% to one third of adolescent students affected also experience additional learning challenges (ADHD In Teenagers Signs Symptoms and Treatment, n.d.). Because yoga requires focused attention to produce and maintain the poses, it forces people to focus and aids them in learning ways to focus that can be transferable. Yoga requires a combination of focused attention combined with openness for the expression and flow of one's experiences in a non-judgmental way (Moore & Malinowski, 2009). Therefore, it appears yoga can positively impact adolescents' ability to cope with challenges they face and stressful situations, as well as an acceptance of their own characteristics forms a foundation for their experiences.

In a five day week, adolescents spend seven or more hours in school settings where Social Emotional Learning (SEL) can be practiced and applied among peer relationships and academic challenges. Adolescents, like adults, consistently receive messages from their body and social cues throughout the day. People exhibit their understanding and ability of SEL when they show the ability to understand and manage emotions, set and accomplish positive goals, connect through exhibiting and showing empathy, build and preserve positive relationships, and make responsible decisions.

Emotional Intelligence (EI), a term coined in 1995, is a significantly valuable skill. Social Emotional learning, as a distinct concept, was emerging about the time emotional intelligence was being published (Goleman, n.d.). The Collaborative for Academic, Social and Emotional Learning (CASEL, 2016) is quickly growing and is

especially prominent within school yoga programs. CASEL addresses five core competencies, which include: self-awareness, self-management, social awareness, relationship skills, and responsible decision-making (CASEL, 2016).

Changes in Adolescents' Level of Stress with Yoga

Through an incorporation of social emotional learning and learning emotional intelligence, adolescents self-awareness regarding stress and stressful situations can improve. Research has found that adolescents experience varying levels of stress due to developmental changes. Adolescence is a time of overwhelming physical, social, and emotional change (Saunders, 2015). Practicing yoga to aid in coping ability and regulation at this age has shown to be beneficial (Bergen-Cico, Razza, & Timmins, 2015). In one study of 40 adolescents who were yoga participants receiving treatment in a hospital for adjustment disorder and depression reported improvement in their positive affect and a decreased level of anxiety; these participants showed less anxious behavior, such as less fidgeting and a reduced cortisol level (Kaley-Isley, Peterson, Fischer, & Peterson, 2010). Therefore, a decrease in the physical affects of anxiety and ability to cope appeared to be related to engagement in a yoga practice.

Yoga has been shown to positively affect stress levels. A study of adolescent students regular participation in yoga confirmed previous research findings how yoga aids in increased awareness, social adjustment, decreasing anxiety and decreasing depression (Bridges & Madlem, 2007). A study completed by Wisner, Jones, and Gwin (2010) resulted in a lower amount of perceived stress, state, and trait anxiety. Furthermore, a study completed by Felver, Butzer, Olson, Smith, and Khalsa (2015) concluded mindfulness interventions, such as yoga, seem to improve negative mood and affect.

Awareness of one's stress level paired with yoga results in regulation, particularly nervous system regulation.

Yoga's Contribution on Concentration and Focus

The average learning environment in a school involves multiple opportunities for distractibility; yoga can be incorporated as a tool for transitions and re-focusing to improve engagement. One particular yoga group demonstrated improved social confidence with their teachers and contributions in the classroom (Kaley-Isley et al., 2010). A different group of students showed an increase in their long term regulation at school and total regulation overall, but they experienced a slight decrease in long term regulation half way through the year until the end of the program. (Bergen-Cico, Razza, & Timmins, 2015). Furthermore, some students reported they had awareness the practices were to help promote relaxation and focus but did not always experience this (Bergen-Cico, Razza, & Timmins, 2015). One intervention group showed significant decreases in the number of days students were absent from school and decreases in rule violations (Wisner, Jones, & Gwin, 2010). As a result, some current studies show some discrepancy.

Improvement in Self-Esteem and Self Concept with Yoga

Yoga incorporates challenges while bringing attention to how to work through the challenges. Kaley-Isley, Peterson, Fischer and Peterson (2010) and Bridges and Madlem (2007) showed an increase in the level of self-confidence and self-esteem in yoga groups. Self-esteem was shown to increase significantly when utilizing relaxation (Wisner et al., 2010) These findings exemplify how yoga likely increases a youth's sense of mastery and accomplishment. One's self-concept is changing during adolescence; it is even more

advantageous to highlight the significant benefits of yoga. Participants have shown to improve their social self-concept through yoga (Kaley-Isley et al., 2010). There is a strong possibility that as an adolescent improves their self-concept by looking within they will also improve their self-worth and compassion.

Yoga's Outcome on Awareness

Learning to regulate and express emotions involves a certain level of awareness. This may be a vital skill for adolescents, which could contribute to an adolescent's focus and intention regarding their future. Mindfulness has been shown to improve emotional regulation with adolescents and children (Coholic & Eys, 2016). Similarly, Kaley-Isley, Peterson, Fischer, and Peterson (2010) report how yoga's ability to assist with self-regulation is a key component; as adolescents learn skills to increase their repertoire of healthy coping by regulating and calming their bodies and emotions, they are building valuable skills. Awareness of the body is necessary to regulate emotions.

Having awareness of emotions, emotional intelligence and knowing how to regulate them directly connects to the locus of control, and choosing what thoughts and emotions to act upon. Adolescent students have responded with significant increases in increased internal locus of control, including the ability to manage anger (Wisner et al., 2010). Adolescents who reap the benefits of emotional expression and control have developed stronger awareness and emotional intelligence.

Yoga's Effect on Relationships

Numerous skills someone develops from a regular practice overlap with one another, both directly and indirectly, contributing to the quality of relationships with people. In texts from thousands of years ago yoga practitioners emphasize that the first

relationship someone has is with their self, and once this relationship is established relationships with others can be developed and strengthened. Of particular importance to an adolescent, is their relationship with peers. Since this changing age group is pushed and pulled in multiple directions, possessing a safe place and a safe way to express true thoughts and feelings is vital to their health. Participants improved their social confidence and peer communication skills through their yoga practice (Kaley-Isley et al., 2010). These improved relationships can arise from the development of effective coping and social skills (Coholic & Eys, 2016). One particular participant explained how being respectful to other people and doing nice things for people is important (Coholic & Eys, 2016). These communication skills, gained through a regular mindfulness practice, positively influence each of their relationships and leave a positive lasting impact on an adolescent and their life-trajectory.

Mindfulness yoga techniques involve observing the present moment with acceptance and a non-judgmental view. Adolescence is a time of stress, involving immense changes physically, emotionally, and socially (Saunders, 2015). Yoga participants have shown decreases in their level of anxiety (Kaley-Isley et al., 2010). This is a critical time for developing self-esteem, confidence, and self-concept. Multiple studies have shown group participants to have an increase in self-esteem, confidence, and self-concept (Kaley-Isley et al., 2010; Coholic & Eys, 2016; Bridges & Madlem, 2007). There is reason to believe these innumerable effects of a yoga practice positively influence adolescents.

Research Question

Many studies have presented how yoga has been implemented with adolescents. However, the literature demonstrates that yoga is used in numerous ways and is inconsistent regarding its impacts and what goals of yoga practice are with adolescents. Even among the common educative and socially therapeutic adolescent contexts, there appears to be an array of approaches and goals. Some studies emphasize stress and others emphasize focus and other positive outcomes. Within the last 10 years, yoga has gained much popularity among American youth, but there is limited information examining the reason youth practice yoga (Conboy et al., 2013). While the evidence shows that yoga is helpful in the general population, research about how yoga may benefit the adolescent population, ages 11 to 19, is limited. An important area of inquiry, therefore, is to further identify how the literature presents the variety of yoga approaches with adolescents and their intended outcomes. The purpose of this study is to systematically determine within the literature how practitioners use yoga, as an integrative method, with adolescents in socially therapeutic and educational settings, and what are the intended goals.

Method

Research Purpose and Concepts

The purpose of this systematic literature review was to answer the following question: How are certified professionals using mind-body techniques, such as yoga and mindfulness, with adolescents, and what are the intended goals?

In this study adolescents are defined as youth experiencing a transitional developmental stage who are between the ages of 11 and 19 years old. The age of onset of developmental changes can vary among boys and girls, and having a span provides

valuable feedback. As Dahl (2001) states, the core of adolescence encompasses development of emotions and self-regulatory skills of behavior. This age group faces interpersonal adjustments, physical changes, contemplation of moral principles, and social changes.

This review will address the use of yoga as a support for adolescents' development. Mind-body is the interrelationship of emotional, spiritual and physical state or health. Yoga is a type of mind-body technique, defined as physical postures and movement, breathing exercises, deep relaxation techniques (that assist the release of tension and stress) and mindfulness (which improves emotion regulation skills) (Conboy et al., 2013). Mindfulness is an aspect of the mind-body relationship and an aspect of yoga practice. In the study, mindfulness is defined as observance and acceptance of the present moment in a non-judgmental view. Some attention will be given to the effectiveness and benefits of yoga interventions. There is a focus on how mind-body techniques, such as yoga, are used with adolescents, in order to complete quality research and program implementation in the future.

Study Types

In order to answer the question of how mind-body techniques such as yoga and mindfulness are used with adolescents, specific study types were included. Study types included empirically- based designs including qualitative and quantitative ones. Experimental, quasi-experimental, and non-experimental, including focus groups and case studies, will be included. Only English speaking countries were incorporated. Each of these studies reported on adolescents.

Search Strategy

In a preliminary search of multiple databases and academic journals, no systematic literature reviews were located addressing the question about how mind-body techniques such as yoga are used with adolescents in socially therapeutic and educational settings and its intended goals. A sensitivity and a specificity search was conducted for further identification and feasibility. A sensitivity search incorporates general terms, and results in numerous studies. A sensitivity search produces both relevant and irrelevant studies (Petticrew & Roberts, 2005). A specificity search involves a narrow focus, and the search terms used are specific. The studies produced by this search will have high relevance to the topic. However, there is a likelihood some relevant studies will not appear (Petticrew & Roberts, 2005). Completing both of these initial search strategies assisted in the establishment of formal search terms and feasibility for the research.

Three main databases were used for the initial sensitivity and specificity searches. When the sensitivity search was conducted using Alt-Health Watch, SocINDEX, and the Child and Adolescent Development the terms “adolescents and yoga” were used. The results of this search ranged from 35 to 69 articles. The specificity search was conducted using the same databases. Search terms involved any of the following: “Adolescents” and “mindfulness,” “adolescents” and “mindfulness” and “yoga”; “adolescents” and “mind-body” and “mindfulness.” Some searches incorporated the term “holistic health” to investigate any note worthy changes in the results. The results for the multiple searches ranged from having zero results for one, three results for a couple, six results, nine results, 16 results, 23 results and 43 results. Some articles appeared in each database, and

some results showed articles that appeared to have little relation. These searches suggested the systematic review would be feasible.

The objective of the research was the incorporation of yoga with adolescents in a socially therapeutic and educational setting, and how it benefits adolescents. Included articles used yoga or specific concepts of yoga in a direct manner. Therefore, relevant articles were incorporated as long as they addressed and merged specific yoga techniques and guiding principles within the specified age range including, mindfulness, breathing exercises, and relaxation techniques.

Level of Publication

This research incorporated peer-reviewed publications that were full text articles. Due to the early stages of this research topic, literature published within the last 10 years and applicable dissertations were utilized.

Table 1: Articles Included in the Systematic Review

Database	Title	Author(s)
Yoga and Meditation for Children, Adolescents, School Research Repository	Yoga May Mitigate Decreases in High School Grades	B. Butzer, M. Over, J. Taylor, and S. Khalsa (2016)
	Perceived Benefits of Yoga Among Urban School Students: A Qualitative Analysis	D. Wang & M. Hagins (2016)
PsychNET	Yoga Improves Academic Performance in Urban High School Students Compared to Physical Education: A Randomized Controlled Trial	M. Hagins & A. Rundle (2016)
	Effectiveness of a School-Based Yoga Program on Adolescent Mental Health, Stress Coping Strategies, and Attitudes Toward Violence: Findings From a High Risk Sample	J. Frank, B. Bose, A. Schrobenhauser-Clonan (2014)
	Piloting yoga and assessing outcomes in a residential Behavioural Health Unit	S.J. Mcilvain; B. Miller; B.A. Lawhead; C. Barbosa-Leiker; A. Anderson (2015)
SOCIndex	Behavioral and Psychophysiological Effects of a Yoga Intervention on High-Risk Adolescents: A Randomized Control Trial	D. Fishbein, S. Miller, M. Herman-Stahl, J. Williams, B. Lavery, L. Markovitz, M. Kluckman, G. Mosoriak, M. Johnson (2015)
PubMed	A Randomized Controlled Trial Examining the Effect of Mindfulness Meditation on Working Memory Capacity in Adolescents	D. Quach, K. Mano, & K. Alexander (2016)
	Evaluation of the Mental Health Benefits of Yoga in a Secondary School: A Preliminary Randomized Controlled Trial	S. Khalsa, L. Hickey-Schultz, D. Cohen, N. Steiner, S. Cope (2012)
	Yoga and Emotion Regulation in High School Students: A Randomized Controlled Trial	L. Daly, S. Haden, M. Hagins, N. Papouchis, P. Ramirez (2015)
	Evaluation of Yoga for Preventing Adolescent Substance Use Risk Factors in a Middle School Setting: A Preliminary Group-Randomized Controlled Trial	B. Butzer, A. LoRusso, S. Shin, S. Khalsa (2016)
	Benefits of Yoga for Psychosocial Well-Being in a US High School Curriculum: A Preliminary Randomized Controlled Trial	J. Noggle, N. Steiner, T. Minami, S. Khalsa (2012)

Research Synthesis/ Findings

The purpose of this systematic literature review was to explore the question: how are certified practitioners using yoga with adolescents in socially therapeutic and educational settings, and what are the benefits for adolescents? Eleven peer-reviewed articles met the criteria explained above, using the databases SocINDEX, PsychINFO, Child Development and Adolescent Studies, PubMed, and Yoga and Meditation for Children, Adolescents, School Research Repository. Out of the 11 articles, nine of the articles' participants were high school students. Seven studies were from public schools, one from a non-traditional public school, one from a rural public school, and one from an alternative school. One of the articles, out of the nine from high school participants, involved participants from particular grades, seventh, eleventh, and twelfth grade. One article had participants in grades seven through twelve. One article reported participants by their average age, which was 15.4 years old.

Several studies appeared to meet the systematic review criteria originally but had alternative settings. Numerous studies in medical settings, such as hospitals, were initially retrieved. One of the articles had an outpatient behavioral health setting. Ten out of the eleven articles involved a school for the primary setting. Schools locations ranged from California to Massachusetts.

The particular focus of yoga's benefits varied some among the articles. Over half of the research (n= 9) in the systematic review involved a significant component of mental and emotional health. Two of the articles used grade point average (GPA) as a main evaluation and focus technique. Out of the total articles, one article used working

memory as a primary mode of measurement and evaluation related to benefits of yoga. Two articles specifically focused on an urban youth population. One of the 11 articles specifically focused on a high-risk sample, which had very strong and significant positive results. High risk was when faculty members expressed anxieties concerning potential academic failure due to poor grades, truancy, disruptive behavior, repeated suspension, or expulsion.

The majority of the research (10 out of 11 articles) included quantitative data by participants. One of the quantitative articles was a quasi-experimental pretest, post-test design. There was one qualitative study, which used focus groups. Out of the 11 articles reviewed, nine involved experimental design with control groups. The two articles that did not include control groups were the qualitative review and the review with the behavioral health unit.

Format of Yoga Intervention

The length of time participants practiced yoga varied based on the study. The studies that involved physical education (PE) control groups had a predetermined amount of time available for yoga based on students' class period schedules. Four of the 11 studies (36%) had a yoga intervention that lasted anywhere from 45 to 50 minutes. The remaining seven studies (63%) had a yoga practice that lasted anywhere from 30-40 minutes in length.

The largest variation among the systematically reviewed articles involved the total number of weeks yoga was implemented. None of the 11 studies had the same number of weeks for their implementation. Three of the interventions lasted 10 weeks or less, specifically: four, seven, eight or 10 weeks in length. Five of the 11 studies were a total

of 16 weeks or less. The specific number of weeks for these studies included: 11, 12, 12-18, 14, and 16 weeks. The last two of the 11 studies had the longest timeframe for the entire study. One lasted approximately 24 weeks, and the other study lasted approximately 28 weeks. Therefore, the length of intervention varied considerably.

Each yoga intervention in the articles involved a structured yoga session. Yoga was practiced one to two times a week in two of the 11 studies (18%). Yoga practice was implemented two times a week in three of the 11 studies (27%). The yoga participants practiced yoga two to three times a week in three of the 11 (27%) studies. The yoga intervention was practiced three times a week in two of the 11 studies (27%). One of the 11 (9%) studies implemented yoga at a frequency of three to four times a week with participants.

Thematic Analysis

During the analysis of the literature, six interconnected themes emerged from the systematic review regarding what benefits adolescents experience from practicing yoga. The themes include: academic performance, stress, mood changes, emotional regulation, emotional intelligence and resilience. Some themes appeared more than others in the systematic review, and each theme was checked for statistical relevance.

Academic performance. Between trying to ‘fit in,’ while learning about one’s personal identity and definition of self, maintaining a positive academic standing is emphasized among numerous cultures. Research showed the overall GPA of students dropping throughout the school year (Butzer, Over, Taylor & Khalsa, 2015). However, the adolescents in the yoga group did not experience as much of a decline in their GPA as their peers in the control group (Butzer et al., 2015). Similarly, yoga was associated with

a 0.08 percentage increase in GPA for each yoga class that was attended in research conducted by Hagins and Rundle (2016). Overall, participants in the yoga group earned a GPA at 2.70 percentage points higher than the PE group participants (e.g., an overall GPA of 80% for combined classes for yoga participants would be 82.7%) (Hagins & Rundle, 2016). Hagins and Rundle (2016) support a direct association with yoga participation and mean year GPA with higher participation in yoga resulting in a higher mean year GPA. Correspondingly, shortly after the yoga intervention was stopped in one study, the GPA of the yoga participants began to decline (Butzer et al., 2015). Therefore, the research that found participation in yoga classes significantly improved mean year GPA (Hagins, Rundle, 2016). Common yoga techniques, such as focusing on one's breath, were converted into skills related to academic performance, such as test taking strategies (Hagins & Rundle, 2016). Yoga appears to influence GPA in a positive way.

Stress. During adolescent development many adolescents are grasping a further understanding of stress and are also trying to balance a schedule with increasing demands. The perception of stress and the feeling of stress was studied with both quantitative and qualitative research. Participants have shared that yoga helped them “relax and reduce stress” (Wang & Hagins, 2016). In the study by Frank, Bose and Schrobenauser-Clonan (2014), stress contributions, such as rumination, intrusive thoughts, and arousal were shown to improve due to yoga. Having time devoted to yoga appears to help clear the mind, specifically related to stress, with adolescents reporting that yoga helped them to have “mental space for themselves” (Wang & Hagins, 2016). By reducing stress and creating time devoted to themselves (even if required due to school or the study) adolescents were learning how to slow down. It is highly likely that

feeling calmer and less stressful facilitates improved social skills (Fishbein, Miller, Herman-Stahl, Williams, Lavery, Markovitz, Kluckman, Mosoriak & Johnson, 2015). These adolescents particularly experienced how this positive time for themselves could involve time away from comparing themselves to their peers and thinking about their personal values, worth, love and strengths instead.

Much research has shown a substantial decline in the level of stress post yoga intervention (Quach, Mano & Alexander, 2016; Butzer, LoRusso, Shin, & Khalsa, 2016). The immediacy of the effect on stress and to what degree stress is improved involves numerous variables. Interestingly, in both control and yoga groups, females reported to have a greater amount of overall tension compared to males, even after a marked improvement in their tension and anxiety (Butzer et al., 2016). Tension and anxiety go hand in hand with one another. The tension-anxiety subscale that was utilized showed significantly better scores in the yoga group compared to the control group (Noggle, Steiner, Minami & Khalsa, 2012), which means the stress and anxiety decreased in the yoga group. While Butzer et al. (2016) stated many participants spoke of ways the “state of relaxation carried over for some periods of time throughout the day,” Wange and Hagins (2016, p. 3) reported no statistically significant difference from the perceived stress scale between the yoga group and the control group. Improvements in stress appear to occur with both females and males.

Mood changes. Emotions are short-lived experiences of feelings or sensations, whereas a mood is much more general and longer lasting. Studies have revealed a connection between practicing yoga and experiencing mood changes, particularly negative moods. Yoga participants have shown to have an overall lower mood

disturbance than those in PE control groups (Noggle et al., 2012). Practicing yoga compared to various aerobic and anaerobic exercise positively influenced mood.

Adolescence is a time when the level of one's mental health becomes more prevalent and apparent, as well as the time when struggles begin to appear. One of the most common mental health encounters is depression. Research findings have stated clear and significant improvements with depression among adolescents upon practicing yoga (Frank, Bose & Schrobenhauser-Clonan, 2014). The change in positive affect did not result in large enough findings to be statistically significant, but improvements in negative affect were prominent in the yoga group when compared to the control group (Nogle et al., 2012). When positive affect was not measured directly, results highly suggested yoga led to an increase in positive affect (Fishbein et al., 2015). Credit is to be given to yoga in improvement in negative expressions and feelings among adolescents, which in turn, appears to enhance their positive life experiences.

Since it is healthy to experience all emotions to varying degrees and levels, adolescents would still have times of frustration or anger. Feeling mad or angry has been described as a secondary emotion with sadness usually as an underlying experience. Similar to improvements with depression, anger appears to decline through a regular yoga practice. Revenge, aggression, and hostility are characteristics of anger (Frank et al., 2014). Yoga participants degree of revenge motivation and hostility drastically declined (e.g., practicing yoga resulted in smaller desire to act on feelings of hostility and violence) (Frank et al., 2014). Anger control outcomes are much more favorable and significant with yoga in comparison to controlled groups (Khalsa, Hickey-Schultz,

Cohen, Steiner, & Cope, 2012). These findings exhibit how yoga can serve as a medium to cope with feelings of anger.

Emotional regulation. Brain development related to thinking and reasoning is beginning to be developed during adolescent development. Learning how to regulate, not take things personally, and process emotions at a new level is a life skill. Research conducted with adolescents in a behavioral health unit suggests yoga improves the ability to self-regulate while utilizing more desirable behaviors (Mcilvain, Miller, Lawhead, Barbosa-Leiker & Anderson, 2015). Wang and Hagins (2016) found that a yoga practice led adolescents to have an increased ability to self-regulate while knowing how to control reactions and emotions and not taking situations personally. The extent of emotional regulation varied among studies and participants in the studies. Research by Butzer et al. (2016) found females reported a greater amount of improvement when compared to males in control groups. The research indicated that regulating emotions and practicing a variety of skills upon feeling particular emotions is improved with a yoga practice.

Emotional regulation can have a direct connection to behaviors, responses and appraisals of events. Involuntary engagement, involuntary action, rumination, intrusive thoughts, physical arousal, and emotional arousal are all emotion regulation indicators (Frank et al., 2014). Research suggested that a regular yoga practice has noteworthy improvements in emotion regulation indicators (Frank et al., 2014). Through arousal, rumination and thoughts, adolescents may benefit from pausing, assisting in regulating, prior to acting during some situations. There is a difference between how one responds, especially once emotionally regulated, and how one initially reacts, particularly internally. Participants in research from Wang and Hagins (2016) explained that yoga has

taught them that they can feel a reaction without automatically responding. Mindfulness skills in yoga encouraged students to allow emotions to pass rather than responding impulsively (Fishbein et al., 2015). These studies have suggested adolescents can apply yoga concepts to life situations, aiding in modulating one's thoughts or behavior.

Emotional intelligence. Emotional Intelligence involved the overall ability to recognize and express one's emotions. It involved both regulating emotions and realizing how they affect interpersonal relationships, which adolescents begin to experience to a stronger degree than their younger years. Much of the research connected emotional intelligence and emotional regulation when measuring outcomes and discussing findings. Social emotional learning involves emotional intelligence. Therefore, some studies explained participants' capacity of emotional intelligence directly proportional to emotional regulation.

The research showed that once an adolescent recognized an emotional response and sensation, a component of emotional intelligence, they had the capability of deciding how to act in relation to the emotion. In one study, a yoga group improved their emotion regulation, resulting in more emotional intelligence, compared to a Physical Education (PE) control group (Daly, Haden, Hagins, Papouchi & Ramirez, 2015). The PE control group experienced a decrease in this emotional awareness (Daly et al., 2015). Similarly, research has noted substantial improvements in the use of emotional regulators (Frank et al., 2014), indicating emotional intelligence was being used. An improvement in emotional intelligence was experienced with yoga.

Multiple assessments and scales measure emotional intelligence and emotional regulation skills directly linked to emotional intelligence. The Trait Emotional

Intelligence Questionnaire-Adolescent Short for (TEIQue-ASF) measures global trait emotional intelligence (McIlvain et al., 2015). It uses the domains of well-being, self-control, emotionality (which is described as empathy), and sociability (McIlvain et al., 2015). Adolescent participants' improvement in TEIQue scores indicated a growth in global trait emotional intelligence (McIlvain et al., 2015). Findings have suggested yoga has a greater impact on emotion than PE alone (Daly et al., 2015).

With a dedicated practice, positive effects from a yoga practice were noticeable to people during interpersonal relationships and daily habits. A yoga participant's parent reported noticing positive change in the participant, which was described as being more mindful (Wang & Hagins, 2016). Further more, Daly et al. (2015) found a correlation between body awareness and emotion regulation as it relates to emotional intelligence. Awareness and acceptance were large factors of emotional intelligence, like self-regulation. Improvements in mindfulness and acceptance were bordering on statistically significant results (Noggle et al., 2012). Pro-social behaviors and improved social skills were perceived to improve through emotional intelligence (Fishbein et al., 2015). Emotional intelligence positively contributes to interpersonal skills and relationships.

Resilience. The ability to adapt when faced with life adversities was connected to resilience, the capacity to bounce back and 'recover' from difficulties. A positive attitude, self-confidence, self-esteem and a support network aid in resilience. Studies that addressed stress, mood disturbance, emotional intelligence and emotional regulation indirectly studied resilience (Daly et al., 2015; Noggle et al., 2012; Frank et al., 2014; Quach et al., 2016; Butzer et al., 2016; McIlvain et al., 2015; Wang & Hagins, 2016). A resilience scale with good internal consistency was used between a yoga and control

group (Noggle et al., 2012). There was improvement in resilience, but not statistically significant, between the groups (Nogle et al., 2012). In another study, the control group decreased in resilience whereas the yoga group increased in resilience (Khalsa et al., 2012). The resilience results between the two groups were identified as statistically significant improvements (Khalsa et al., 2012). Only a few studies have addressed the topic of resilience.

Discussion

This systematic review was established in order to explore the present body of knowledge addressing how yoga is utilized with adolescents and what the benefits are. The objective of the research was to examine the entire body of knowledge on this topic in relation to the research question. Therefore, this is a comprehensive approach. The review was organized to ensure a systematic plan through the establishment of specific inclusive and exclusive criteria and specific search processes.

The amount of overall information for each theme varied. At least half of the studies referenced stress, anxiety and tension in their research. This suggests stress is reduced through a yoga practice. There was a slight differential in about one eighth to one fourth of the articles, stating that the males in the studies experienced a stronger benefit from their PE class than yoga in relation to stress. Similarly, emotional awareness, emotional intelligence and yoga's affect on mood showed promising positive results in over half of the studies. This leads to speculation that yoga aids in coping with one's internal world of emotions among adolescents.

Social skills contribute to the resiliency of an adolescent, and the level of resiliency an adolescent possesses has a relationship to GPA. There were limited results

related to how yoga affects GPA, resilience, social skills and prosocial behaviors. The studies that addressed GPA had very similar findings, with the presence of a direct positive correlation between GPA and yoga. Therefore, we can speculate that a yoga practice results in adolescents having a higher GPA.

What emerged from these findings is how practitioners use yoga as an integrative method, with adolescents in socially therapeutic and educational settings, and its intended goals. The reduction of stress appears to be a particularly notable finding in that it was found in all studies. Numerous studies noted participants had an improvement in negative affect. An increased ability to regulate emotions appears to be a notable finding, with all studies having valuable finds. The improvement in emotional intelligence appears to be a noteworthy finding, in which it was found in all studies. Academic performance was noted sometimes, but not in all studies, indicating this long-term quality may not be as easily altered by yoga, or should at least be considered as part of a larger intervention. Resilience improvements were noted inconsistently among the studies, indicating some incongruence in generalizable findings. This long-term skill may not be easily altered by a yoga intervention, along, or should at least be considered as an adjunct to another intervention.

Assessment of the Current Body of Knowledge

The low number of qualified articles showed there is little peer-reviewed research on the topic, as a whole. The majority of studies had an exploratory focus with some descriptive aspects, indicating an emerging area of study, rather than an established one. Several quantitative measures are utilized through the use of Likert scales. One study,

which used a qualitative approach, provided some insight into what the participants experienced, expanding on relevant themes in the findings.

Articles very minimally addressed resilience, resulting in pondering to what extent yoga improves resilience. Furthermore, articles that addressed emotional intelligence and emotional regulation slightly mentioned how these two concepts relate to prosocial behaviors and positive social skills. Resilience, emotional intelligence, and emotional regulation all affect communication and relationships. This connection results in contemplation about to what degree yoga affects prosocial behavior.

Practice Implications

The results from this systematic literature review indicate adolescents' benefit from practicing yoga, both during the yoga session and in transferring skills from yoga to their external environment. Multiple studies have confirmed that adolescents improve their ability to cope with stress, improve their overall mood and gain emotional intelligence and emotional regulation skills through yoga. Findings among the articles imply that schools that evaluate and implement yoga either before or after the school day or during the school day will most likely experience and notice changes among the students. It is suggested that schools allow teachers time and creativity to apply yoga into their classrooms. Interestingly, the studies that were longer than eight weeks or had yoga more than one time per week showed more definitive results. Therefore, it is suggested yoga is implemented more than once a week, and the impact of a yoga practice can take two to three months to have clearly significant changes. Additionally, outpatient mental health settings can greatly benefit from the mind-body connection yoga has to offer clients.

Future Research Implications

A prominent and repeating observation in this systemic review was that there is a significant limitation on the amount and quality of research on the use of yoga with adolescents. Researchers have explored the use of yoga with adult populations frequently, including impacts on mental health. Adolescence is a significant developmental period; and researchers have noted several mental health challenges emerge and become apparent during adolescence. Due to its early promising findings, it is recommended that more research is conducted with this population and this therapeutic modality in order to understand the current findings in more depth, establish a common understanding of the impacts of yoga intervention during adolescent development, and what constitutes an effective yoga practice for adolescents.

There are a few reasons the research may be limited. Within the last five, possibly 10 years, yoga has become more recognized in the United States. Although this study was not limited to the United States, the studies that were found outside using the search criteria were non-English speaking countries, such as India. Similarly, due to more restrictive human subject research criteria involving minors, there is a chance some adolescents who are interested in participating in the research are unable to due to a lack of consent from a parent or guardian. This results in less participants, limiting research. Furthermore, the percentage of qualified yoga professionals is diluted with the recent growth in the modality.

A collaborative team is necessary to began implementing and assessing regular yoga programs academic effect on adolescents. Regular program assessment within all settings will enhance research. When evaluating the programs, the frequency of the

practice and how long the intervention lasts is vital to address. The results supporting yoga contributes to a higher GPA noted that in some cases the GPA began to decrease when the yoga intervention stopped. Researching this further is necessary. Furthermore, with most of the conducted research being completed among rural public schools, it leaves a need for future research to be conducted in schools in large cities or suburbs to compare results regarding GPA, stress, emotions and resilience.

The majority of the research included is descriptive and quasi-experimental.

However, it would be important to gather more personal stories and experiences around the mind-body modality of yoga with adolescents from all backgrounds and to incorporate more longitudinal studies. The incorporation of personal testimonies and experiences (from qualitative research) can give more meaning to what occurs during yoga practice. In the qualitative study used in the systematic review, participants were able to expand on how yoga affected their stress reduction, self-esteem, emotional regulation, mindfulness and academic performance in ways they would not have been able to if the study was quantitative. This suggests that further information can be gained regarding yoga and adolescents' self-esteem, social interactions, behaviors, relationships, and resilience. Qualitative research could provide information detailing how yoga is beneficial, including specific times in daily life or life events, including a view (or perspective) from within the individual (from their internal working, private world).

Currently, there are promising early findings among adolescents. There are more conclusive findings among adult populations. There is a clear need for further research. It makes sense to expand the offering of yoga with strong supportive evaluation components. Professionals and the general population can promote further research by

conducting credible, scholarly, peer reviewed research and volunteering as a participant in research.

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