

School-based Yoga Programs in the United States: A Survey

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ABSTRACT

Context • Substantial interest has begun to emerge around the implementation of yoga interventions in schools. Researchers have found that yoga practices may enhance skills such as self-regulation and prosocial behavior, and lead to improvements in students' performance. These researchers, therefore, have proposed that contemplative practices have the potential to play a crucial role in enhancing the quality of US public education.

Objective • The purpose of the present study was to provide a summary and comparison of school-based yoga programs in the United States.

Design • Online, listserv, and database searches were conducted to identify programs, and information was collected regarding each program's scope of work, curriculum characteristics, teacher-certification and training requirements, implementation models, modes of operation, and geographical regions.

Setting • The online, listserv, and database searches took place in Boston, MA, USA, and New Haven, CT, USA.

Results • Thirty-six programs were identified that offer yoga in more than 940 schools across the United States, and more than 5400 instructors have been trained by these programs to offer yoga in educational settings. Despite some variability in the exact mode of implementation, training requirements, locations served, and grades covered, the majority of the programs share a common goal of teaching 4 basic elements of yoga: (1) physical postures, (2) breathing exercises, (3) relaxation techniques, and (4) mindfulness and meditation practices. The programs also teach a variety of additional educational, social-emotional, and didactic techniques to enhance students' mental and physical health and behavior.

Conclusions • The fact that the present study was able to find a relatively large number of formal, school-based yoga programs currently being implemented in the United States suggests that the programs may be acceptable and feasible to implement. The results also suggest that the popularity of school-based yoga programs may continue to grow. (*Adv Mind Body Med.* 2015;29(4):18-26.)

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Some research has suggested that mind-body practices, such as yoga, may have beneficial effects on the mental and physical health of children and adolescents.¹⁻⁴ Indeed, substantial interest has begun to emerge in the United States regarding the development and application of meditation- and yoga-based interventions in schools to improve students' mental and physical health and performance.⁵⁻¹¹ In a review proposing the implementation of contemplative practices such as yoga and meditation in education, Davidson et al⁵ have suggested that these practices induce changes in brain structure and function, which can enhance skills, such as self-regulation and prosocial behavior, and lead to improvements in students' performance. These researchers, therefore, have proposed that contemplative practices have the potential to play a crucial role in enhancing the quality of US public education. Similarly, Hyde¹² points to recent governmental initiatives in the United States that

have focused on educating *the whole child* and suggests that teaching yoga in schools is an important part of that movement. Yoga is increasingly being implemented in school settings,¹³ with several school-based yoga programs emerging across the United States.¹⁴

Research on School-based Yoga

The National Center for Complementary and Integrative Health (NCCIH) defines *yoga* as follows:

A mind-and-body practice with historical origins in ancient Indian philosophy. Like other meditative-movement practices used for health purposes, various styles of yoga typically combine physical postures, breathing techniques, and meditation or relaxation.¹⁵

Research on school-based yoga interventions is in its early stages; however, initial results are promising. For example, Serwacki and Cook-Cottone¹⁶ recently reviewed 12 published studies of school-based yoga interventions. Although most of the studies were of low-to-moderate methodological quality, the preliminary evidence suggested that the yoga interventions exerted positive effects on several factors, including emotional balance, attentional control, cognitive efficiency, anxiety, negative thought patterns, emotional and physical arousal, reactivity, and negative behavior. Additional research has also revealed positive effects for school-based yoga on such factors as concentration, self-regulation, attention, anxiety, stress, mood, resilience, emotional arousal, self-esteem, and coping frequency.^{9,17-32}

These preliminary findings suggest that providing yoga within the school curriculum may be an effective and feasible way to help youth develop skills in stress management and emotional regulation. The high prevalence of psychiatric disorders among youth,³³ coupled with the fact that most schools do not prioritize training in stress management and emotional regulation,³⁴ suggests that these types of interventions might be advantageous in school settings.

The growing interest in providing yoga in school settings has resulted in the development and implementation of numerous school-based yoga programs.¹⁴ It is important for educational policymakers and administrators; school health providers, such as nurses and counselors; and academics to be aware of the growing number of school-based yoga programs that are emerging across the United States, particularly in light of preliminary research suggesting potentially positive effects for these interventions.

However, school-based yoga programs have been created largely independently of one another, making it difficult for researchers, educators, and practitioners to compare features across programs and to assess whether a particular program suits their needs. The purpose of the current study was to provide a summary and comparison of school-based yoga programs across the United States. Although some preliminary research has been conducted on the efficacy of individual school-based yoga programs in isolation,¹⁶ to the research team's knowledge the current

article represents the first attempt to summarize and compare interventions' characteristics *across* programs.

METHODS

Data collection for the current study took place between January 2013 and April 2014. *School-based yoga programs* were defined as yoga practices or curricula developed by organizations specifically for use in school settings.

School-based yoga programs were identified in 3 primary ways: (1) through the current research team's personal knowledge and communication with experts in the field; (2) through reviews of the research literature on yoga in schools; and (3) through online searches of 2 databases—the International Association for School Yoga & Mindfulness (IASYM) database, and the Garrison Institute's Contemplative Education Program database.

The Garrison Institute's database compiles information about US and Canadian programs that provide contemplative education for students from kindergarten through grade 12 (K-12). Similarly, the IASYM database was created as a resource to compile and disseminate information regarding school-based yoga programs around the world. After exhausting those primary sources, a final online search was performed using Google to identify any remaining programs. Terms for the Google search included words such as *school-based yoga*, *yoga in schools*, *yoga programs in schools*, and *contemplative education programs*.

Inclusion criteria required that an organization was currently providing yoga-based programming in schools within the United States. Mindfulness and/or meditation programs were included only if they explicitly incorporated a significant focus on yoga-based practices, such as physical postures and/or breathing exercises, in addition to meditation. Programs that focused exclusively on meditation (ie, solely on sitting meditation) and/or programs that were located outside of the United States were excluded. Meiklejohn et al,³⁵ Black et al,³⁶ Burke,³⁷ Sprengel and Fritts,³⁸ Zenger et al,³⁹ and Weare⁴⁰ provide reviews of research on mindfulness programs for youth.

The current research team queried the organizations that were found to provide school-based yoga programs by reaching out directly via e-mail or phone using a formal script. In particular, each organization was asked to provide answers to a series of questions regarding its program, including (1) the grade level(s) covered; (2) the type of program—in-academic-classroom instruction (eg, yoga at one's chair or desk), full-yoga practice in an open space or gym, or both; (3) the primary geographical region(s); (4) the number of formally trained instructors; (5) the existence of a requirement for basic yoga-teacher certification prior to receipt of training in the program, including the number of hours required for certification; (6) the number of hours of training required by the school-based yoga program; (7) the number of schools currently implementing the program; and (8) the number of years that the program has been in service.

To gain additional breadth regarding the characteristics of each program, the current research team also compiled and reviewed online and print materials regarding each program's scope of work, curriculum characteristics, teacher-certification and training requirements, implementation model, mode of operation, and primary geographical region.

RESULTS

Table 1 provides a detailed summary of the information gathered from each program. Thirty-six organizations were identified that are currently offering yoga programs in school settings in the United States. The number of years in service across all of the programs ranged from 2 to 21 years, with an average of 9 years.

The results suggested that more than 940 schools across the United States are currently implementing a yoga program, and more than 5400 instructors have been trained by those organizations to facilitate yoga in schools. The programs represent a mix of nonprofit and for-profit organizations.

Several of the organizations provide customized curricula and implementation plans (ie, manualized programs outlining a series of yoga-class lesson plans) for individual schools and whole school districts. However, some of the smaller organizations do not have manualized programs, and, thus, yoga teachers are encouraged to develop their own lesson plans based on the core principles and guidelines of the overarching program. Some programs focus exclusively on school programming, whereas other yoga programs are also run at mental health organizations, community youth programs, or community organizations for at-risk youth. In addition to children's programming, many programs also include yoga instruction for parents, classroom teachers, and other school staff.

Grades Covered

A total of 75% of the programs surveyed (ie, 27 of 36) offer yoga programming that spans kindergarten, or even preschool, through grade 12, whereas the remaining programs focus specifically on elementary, middle-school, or high-school students. Some programs have developed separate manuals for each age group (eg, "Yoga Ed" and "YoKid"); however, most programs simply allow teachers to use existing manuals and modify their yoga instruction to be appropriate for the age level that they teach.

Setting and Components

The organizations were also asked about their primary modes of operation, distinguishing between instruction in the academic classroom (eg, yoga at one's chair or desk) and a full-yoga practice in an open space or gym. Programs that use in-classroom lessons insert short yoga breaks throughout the school day during regular class time to introduce a few simple exercises, instead of providing a typical, full, yoga class (30-45 min). Full-yoga implementation, on the other hand, places a greater emphasis on the elements of physical exercise in the yoga practice and often operates as a part of

physical-education class, an after-school elective, or a between-class recess. This form of yoga program typically requires special equipment (eg, mats, blocks, blankets, or straps) as well as a space other than the regular classroom (eg, a gym).

Eight programs in the current study's sample indicated that they run a full-yoga program exclusively; 3 programs specialize in in-classroom yoga instruction; and the remaining 25 programs indicated that they offer both a full-yoga program and an in-classroom option, tailoring the program to each school's needs.

All of the programs outlined in Table 1 typically have incorporated the 4 basic elements of yoga practice into their curriculums, including physical postures, breathing exercises, relaxation techniques, and mindfulness and meditation practices. Most programs also include didactic elements, such as ethics, philosophy, or psychology lessons.

Each yoga class can include all 4 aspects of yoga or only a few elements. Many programs also allow the inclusion of nonyoga components, such as games, songs, arts and crafts, journaling, team-building, and community-enhancing exercises as well as activities that teach skills, such as social-emotional learning, bullying prevention, peer-counseling techniques, community action and outreach, leadership training, and character development. In most cases, these nonyoga elements are woven into the yoga lessons.

All 36 programs also stressed that their yoga lessons are secular (nonreligious) and teach universal values, often referred to as life skills. The inclusion of elements that are not traditionally part of a yoga class allows the yoga programming to be integrated with a school's values and existing school-wide, social-emotional learning programs. Although the majority of programs do not have a formal relationship with the Collaborative for Academic, Social, and Emotional Learning (CASEL), many of the programs have goals that are aligned with the core CASEL competencies (ie, enhancing students' self-awareness, self-management, social awareness, relationship skills, and responsible decision-making).⁴¹

Training and Implementation

A great deal of heterogeneity exists with regard to the training and implementation methods currently used by school-based yoga programs. In particular, the levels of training and certifications required as well as the nomenclature employed within a program's structure (eg, certified teacher, facilitator, apprentice, or licensed trainer) can vary extensively.

For example, some organizations offer training for independent yoga teachers who are interested in implementing yoga in schools as part of what might be considered a yoga internship or residency, whereas other organizations train classroom teachers, physical education teachers, school counselors, school nurses, and/or paraprofessionals to implement a limited subset of practices from their programs. Depending on the model of implementation and the target audience, the organizations may offer 1-day, professional development workshops for

Table 1. Summary of Characteristics of School-based Yoga Programs

Program	Grades	In Classroom vs Full Yoga	Basic RYT 200 Yoga Teacher Certification Required?	No. of Trained Instructors	No. of Mandatory Training Hours	No. of Schools Currently Implementing Program	No. of Years Organization in Service	Primary Geographical Region	Web Site
Bent on Learning	K-12	Full yoga	Yes	50	100	16	12	New York, NY	bentonlearning.org
Calming Kids Yoga	PreK-12	Both	Yes	200	40	Unable to answer	11	USA, primarily Colorado	calmingkidsyoga.org
Circus Yoga	K-12	Both	No	300	100	Unable to answer	16	Nationwide, primarily Northeast	circusyoga.com
Core Yoga in Schools	K-12	Both	Yes	10	18	4	4	Boston, MA	coreyoga.com
Get Ready to Learn	PreK-12	Both	Yes	100	60	55	7	USA, international	getreadytolearn.net
Go Grounded	PreK-12	Both	No	350	22	20	6	Georgia, North Carolina, New York, New Jersey	gogrounded.com
Headstand	K-8	In classroom	No	3	200	3	6	San Francisco, CA; New York, NY	headstand.org
Holistic Life Foundation	PreK-12	Both	No	9	250	16	13	Baltimore, MD; Northeast/ Midatlantic region	hlfnco.org/home.htm
Integral Yoga Institute: Yoga at School	K-12	Both	Yes	10	36	Unable to answer	10	New York, NY	iyiny.org/about-us/yoga-at-school
Karma Kids Yoga	K-12	Both	No	36	30	18	12	New York, NY	karmakidsyoga.com/yoga_classroom.html
Kripalu Yoga in Schools	G7-12	Full yoga	Yes	75	60	24	6	USA, primarily northeast; international	kripalu.org/be_a_part_of_kripalu/812
Lineage Project	G6-12	Full yoga	No	18	20	13	16	New York, NY	lineageproject.org
Little Flower Yoga/School Yoga Project	PreK-12	Both	No	52	206	24	8	New York, NY	littlefloweryoga.com
Mindful Practices	PreK-12	Both	Yes	23	40	75	7	Midwest, primarily Chicago, IL	mindfulpracticesyoga.com
Next Generation Yoga	PreK-8	Both	No	30	24	12	17	USA, primarily New York, California	nextgenerationyoga.com/ngy_kids_schools.html
Niroga Institute	K-12	Both	Yes for full yoga; No for in-classroom	250 full yoga; 1000 in-classroom	15 in full yoga; 6 in-class level 1; 12 in-class level 2; 12 in-class level 3	100	9	USA, primarily California; international	niroga.org

Table 1. (continued)

Program	Grades	In Classroom vs Full Yoga	Basic RYT 200 Yoga Teacher Certification Required?	No. of Trained Instructors	No. of Mandatory Training Hours	No. of Schools Currently Implementing Program	No. of Years Organization in Service	Primary Geographical Region	Web Site
Om Schooled	K-5	Both	No	160	20	5	4	New York, NY	om-schooled.com
Resilient Kids	K-12	In classroom	No	13	30	9	3	Rhode Island	resilientkids.org
School, Inc	PreK-5	Both	No	17	95	9	12	Los Angeles, CA; Pasadena, CA	school-yoga.org
The Newark Yoga Movement	PreK-12	Both	Yes	30	20	14	5	Newark, NJ	newarkyogamovement.org
The Sean O'Shea Foundation	G3-12	Both	Yes	100	10	18	6	San Diego, CA; Los Angeles, CA	seanosheafoundation.org
The Sonima Foundation	K-12	Full yoga	No	32	100	18	3	California, Florida, New York	sonimafoundation.org
The Wellness Initiative	PreK-12	Full yoga	Yes	25	30	37	8	Denver, CO, metro area	wellnessinitiative.org
YOGA for Youth	G1-12	Both	No	300	40	9	21	Los Angeles, CA; New York, NY; North Carolina; Toronto, Canada; Mexico	yogaforyouth.org/the-program
Yoga 4 Classrooms	K-12	In classroom	No	50 licensed, ^a 35 school site ^b	57 licensed, ^a 23 school site ^b	60	4	USA; Canada; Puerto Rico	yoga4classrooms.com
Yoga Calm	PreK-12	Both	No	150	100	130	14	USA, primarily northwest; Oregon; Washington State; California; Colorado; Minnesota; Kentucky	yogacalm.org
Yoga Child	PreK-12	Both	No	50	50	3	14	Philadelphia, PA	yogachild.net
Yoga Ed	PreK-12	Both	No	1000	95	100	15	Throughout USA; international	yogaed.com
Yoga Enriching Schools	K-12	Full yoga	Yes	12	38	3	2	Los Angeles, CA; Pasadena, CA	yogainschool.org
Yoga Gangsters	K-12	Both	No	761	15	Unable to answer	10	USA	yogagangsters.org
Yoga in My School	PreK-12	Both	No	4	24	25	11	Alberta, Canada	yogainmyschool.com
Yoga in Schools	K-12	Both	Yes	4	40	58	5	Pittsburgh, PA	yogainschools.org

Table 1. (continued)

Program	Grades	In Classroom vs Full Yoga	Basic RYT 200 Yoga Teacher Certification Required?	No. of Trained Instructors	No. of Mandatory Training Hours	No. of Schools Currently Implementing Program	No. of Years Organization in Service	Primary Geographical Region	Web Site
YogaKids International: Tools for Schools	PreK-8	Both	Yes	120	87	Unable to answer	21	USA, Canada	yogakids.com
YoKid	PreK-12	Full yoga	No	60	20	51	8	Maryland; Virginia; Washington, DC	yokid.org
Youth Yoga School	PreK-12	Full yoga	No	5	95	8	4	Midwest, primarily Indiana	youthyogaschool.com
108 Monkeys	K-12	Both	Yes	9	14	4	2	New Haven, CT	108monkeys.org

Abbreviations: RYT, Yoga Alliance Registered Yoga Teacher certification.

^aLicensed denotes semester-long in-classroom residency, in which a licensed yoga teacher teaches the program at a school.

^bSchool site denotes a member of the school's staff teaches the program at the school, providing training and support for all educators, administrators, and counselors.

school staff, design customized trainings for a particular school or school district based on needs and funding, or host multiday trainings for professional yoga teachers who want to expand their repertoire and become certified in a program to be applied in schools.

The prerequisite training requirements across the surveyed organizations were also quite variable. Some programs require their candidates to be classroom teachers with professional experience, with an additional background in yoga and mindfulness. Other programs do not set prerequisites for participation in their yoga-training programs and instead require extensive training for all.

A total of 42% ($n=15$) of the organizations stated that a basic 200-hour, registered yoga teacher (RYT) certification by Yoga Alliance, the governing yoga-teacher training authority in the United States, is required prior to attending their specialized, school-based yoga training.

However, some variability and exceptions exist (Table 1). In summary, programs vary in terms of their instructors' training; however, many programs try to combine the 3 primary delivery methods into a coherent structure to ensure sustainability: (1) external yoga teachers who are not staff members of the school, (2) on-site staff members of the school who become certified yoga instructors, and (3) classroom teachers who are trained to apply a limited subset of yoga practices.

DISCUSSION

The current study makes a unique contribution to the literature by providing a preliminary indication of the scope of implementation of school-based yoga programs in the United States. Specifically, the results of the present study suggested that numerous formal programs exist that provide yoga within school settings as a strategy to enhance students' mental and physical health, behavior, and performance.

Indeed, the present survey identified a total of 36 programs that are currently offering school-based yoga programming, with nearly 5400 yoga instructors reaching students in more than 940 schools across the United States. In general, the programs showed a substantial degree of variability with regard to their training and implementation models. For example, a large range exists with regard to the total number of hours and other requirements that are necessary to complete each program's teacher training. Variability also exists with regard to who is trained, for how long, and with what intention.

At a curriculum level, most of the programs surveyed were more alike than different. For example, despite the variability in the exact mode of implementation—in-classroom versus full-yoga, level of training requirements, number of locations served, or the grades covered, the majority of programs share the common goal of combining the 4 basic elements of yoga—physical postures, breathing exercises, relaxation techniques, and mindfulness/meditation practices—with a variety of additional techniques to promote positive outcomes for students. Indeed, the majority of programs state explicit goals around improving students'

psychological and physical health, social-emotional skills, classroom behavior, and academic performance.

Although additional research is necessary to confirm whether school-based yoga does in fact deliver on those proposed benefits, preliminary studies in the area are promising.¹⁶ Table 1 provides the Web sites of the programs found in the current study, which outline how school-based yoga programs are being implemented at individual schools.

It is also of interest to note that many of the programs surveyed have come into existence in a relatively short period, with most being in their first 5 to 10 years of service. This fact suggests that the popularity of school-based yoga programs is increasing and that the smaller organizations may begin to create manuals for their curriculum materials in time. Taken together, despite some differences that may exist between programs, it can be seen that most programs share an overarching mission to provide yoga in school settings as a technique to promote a variety of positive outcomes for students.

Implications

Schools play an essential role in helping children develop social and academic skills that are required to be successful as adults. Indeed, several preliminary studies suggest that school-based yoga interventions may positively affect numerous aspects of students' health.^{9,17-32} Thus, implementing yoga within the curricula of US schools could have widespread implications, especially considering the fact that school attendance is legally mandated in the United States.

Given that the majority of psychiatric disorders have onsets during childhood or adolescence⁴² and that more than one-third of US children are considered overweight or obese,⁴³ school-based yoga programs have the potential to provide a large-scale preventive intervention that may target early risk factors for psychological and physical health problems in both childhood and adulthood.

It is important to note, however, that implementing yoga within school settings often comes with a unique set of challenges.⁴⁴ Traditional bureaucratic structures, combined with potential fears and misunderstandings about yoga, can cause some parents to be reluctant to endorse participation of their children in yoga-based programming. The yoga programs surveyed for the present study were very careful to emphasize the secular nature of their offerings; however, that reassurance is not always sufficient for some parents. A recent court case in Encinitas, California,⁴⁵ in which a group of parents attempted to sue a school district for implementing a yoga program, serves as an example of that type of resistance. In addition, bringing external teachers into a school to teach yoga can sometimes create logistical issues and cause concern among in-house school staff regarding their roles while the yoga is being taught as well as the stability of their employment. It will be important for future research to examine the most effective and feasible delivery methods for school-based yoga programming.

Limitations

Although every effort was made to contact and include as many school-based yoga programs as possible for the present study, it is possible that the Internet, database, and literature searches did not capture all of the programs that are currently in existence, especially those that are new or emerging. In addition, the current study focused primarily on organizations that have developed school-based yoga programs, not on individual schools that may be offering yoga internally. Thus, it is likely that school-based yoga is being taught more widely than is reflected by the information in Table 1. It is also possible that some of that information is under- or overestimated, due to the fact that many of the included organizations brought up a lack of recordkeeping during discussion with the research team, or mentioned that they were unable to accurately estimate the prevalence of their program due to the nature of their implementation model. In addition, some of the statistics in Table 1 may not be directly comparable across programs, largely due to the variability that exists in the program models and delivery methods as well as to the fact that the programs are not centrally regulated and do not interact with each other.

Future Directions

Based on the limitations described above, it is important to keep in mind that the results of the present study are tentative and preliminary. A more rigorous study of the prevalence of yoga in schools in the United States should consist of a systematic evaluation of the prevalence of the programs by recruiting a random selection of schools to determine what programs are offered as well as the programs' characteristics. Such a study might include a random selection of 100 schools from various geographic regions in which the researchers query senior school staff as to whether their school is currently implementing a yoga program and then complete an analysis of the programs. This approach would not only give a more systematic overview of existing school-based yoga programs, it would also provide an estimate of the prevalence of yoga in schools across the country.

In addition, it will be important for future research to rigorously evaluate the efficacy of school-based yoga programs. Although initial research on yoga in schools has shown promising results,¹⁶ the research is highly preliminary and is often of low methodological quality, with many researchers creating their own informal yoga interventions that are not evidence based. Peer-reviewed research has begun to emerge on some of the yoga programs described in the present study, such as the Holistic Life Foundation,^{20,46} Yoga Ed,^{9,47,48} Kripalu Yoga in Schools,^{9,21,23,31} YogaKids,^{27,49} Niroga Institute,^{26,28} Yoga 4 Classrooms,³² and Get Ready To Learn^{50,51}; however, additional research is needed to build the evidence base for teaching yoga in schools.

Further, the current paper has focused exclusively on an analysis of school-based yoga programs in the United States; thus, it would be worthwhile for future research to examine the extent to which school-based yoga programs exist in

other parts of the world. Some evidence of such programs in other countries is available, including the programs YogaBugs, Yoga'd Up, Yoga at School, and the Yoga Factory in the United Kingdom as well as the New Leaf Yoga Foundation and Yoga in Schools in Canada.

However, it is possible that school-based yoga programs are viewed and implemented differently across cultures. For example, given that yoga originated in India, researchers might assume that introducing yoga in schools in India would be well received. However, yoga is viewed differently in the United States and India, largely due to cultural differences.

For example, in India, a child's exposure to yoga often begins at home, where certain breathing exercises are a part of daily prayers.⁵² Indeed, programs to introduce school-based yoga as a part of governmental policy in India are usually met with objections, because people of other faiths associate yoga with the Hindu religion.⁵³ With that background, yoga is being introduced in schools and in separate camps⁵⁴ based on individual interests and the response that a program receives. However, at the current time, attempts to introduce yoga systematically into all schools across the Indian subcontinent have not been successful. In summary, it will be beneficial for future researchers to conduct a cross-cultural comparison of school-based yoga programs around the world.

CONCLUSIONS

The fact that the present study was able to find a relatively large number of formal, school-based yoga programs currently being implemented in the United States suggests that the programs may be acceptable and feasible to implement. The present results also suggest that the popularity of school-based yoga programs may continue to grow. Indeed, it is likely that the need for the positive outcomes that yoga may provide for students is increasing, including improved social-emotional skills, classroom behavior, and performance.

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