

Gender and Ethnicity: Are they Associated with Differential Outcomes of a Biopsychosocial Social-Emotional Learning Program?

Abstract

Context: Social-emotional learning (SEL) program outcomes may be enhanced when programs take into account gender and ethnicity differences, yet few studies directly examine these variables. The limited literature further suggests improved outcomes accrue by integrating physiological techniques, such as yoga and meditation, directly into SEL curricula to reduce stress. **Aims:** This study investigated the association between outcomes of a yogic breath-based biopsychosocial SEL intervention across gender and ethnicity. **Methods:** Fifty-nine high school students were evaluated on 4 positive (self-esteem, identity formation, anger coping ability, planning, and concentration) and 3 negative SEL outcomes (impulsivity, distractibility, and endorsement of aggression). Using a repeated-measures design, group differences between gender and ethnicity were assessed. **Results and Conclusions:** Significant improvements on all 7 outcomes were found for the sample, suggesting that participants performed better after the intervention. There were neither significant differences between males and females on outcomes nor between different ethnic groups with the exception of African-Americans scoring lower on one of three emotion regulation outcomes. This study, one of the first to directly analyze SEL outcomes by sociodemographic variables, demonstrated the program's biopsychosocial approach was associated with beneficial SEL outcomes across genders and ethnicities. Future studies of biopsychosocial programs taking into account sociodemographics will allow SEL programs to be more effective across diverse populations.

Keywords: Adolescents, ethnicity, gender, social emotional learning, Sudarshan Kriya Yoga

Introduction

Mounting research is illuminating the positive role that social and emotional learning (SEL) programs can play in academic achievement.^[1] SEL is defined as attaining and applying the skills, knowledge, and attitudes to understand and regulate emotions, form and reach positive goals, foster positive interpersonal relationships, and make responsible decisions.^[2] A recent meta-analysis of 213 SEL programs documented better academic performance, attitudes toward learning, increased positive and decreased negative behaviors, and reduced emotional distress among participating students.^[3] The positive changes in behaviors and psychological well-being associated with SEL programs have been found to extend beyond the classroom, including increased social engagement, executive function, and reduced high-risk behaviors such as violence, substance use, and unsafe sex.^[3]

As a result, SEL programs developing the assets and competencies that enhance academic success and positive coping skills have proliferated.

While schools are eager to adapt SEL programs, 59% of schools report that they lack data on which to determine the programs that are most effective for their student populations.^[3] There is some evidence suggesting that SEL programs which are gender and ethnicity appropriate may produce the most robust effects.^[4] Yet, the majority of SEL studies do not examine the relationships between a program's ability to achieve its desired outcomes and gender and ethnicity.^[3]

A growing number of studies further suggest that incorporating techniques to physiologically reduce students' stress levels (such as meditation, yoga, and martial arts) may be an important component of successful SEL programming,^[5,6] yet, there is scant literature on the association between

Ronnie I Newman^{1,2},
Odilia Yim³,
David E Shaenfield⁴

¹International Association for Human Values, Washington, DC, ²School of Osteopathic Medicine, Lifelong Learning Institute, Nova Southeastern University, Davie, Florida, USA, ⁴School of Psychology, Sacred Heart University, Fairfield, Connecticut, USA, ³Department of Psychology, University of Ottawa, Ottawa, Ontario, Canada

Address for correspondence:

Prof. Ronnie I Newman,
International Association for Human Values, 2401 15th Street, NW, Washington, DC 20009, USA.
E-mail: ronnie.newman@iahv.org

Access this article online

Website: www.ijoy.org.in

DOI: 10.4103/ijoy.IJOY_85_18

Quick Response Code:



This is an open access journal, and articles are distributed under the terms of the Creative Commons Attribution-NonCommercial-ShareAlike 4.0 License, which allows others to remix, tweak, and build upon the work non-commercially, as long as appropriate credit is given and the new creations are licensed under the identical terms.

For reprints contact: reprints@medknow.com

How to cite this article: Newman RI, Yim O, Shaenfield DE. Gender and ethnicity: Are they associated with differential outcomes of a biopsychosocial social-emotional learning program? *Int J Yoga* 2020;13:18-24.

Received: 29-11-18. Revision: 25-04-19. Accepted: 20-09-19

SEL programs that include physical stress management strategies and program outcomes. The paucity of data on gender, ethnicity, and stress management techniques makes it challenging for educators and policymakers to assess the best fit of specific SEL programs to their student populations.

Gender

Based on the documented gender differences in adolescents' development of social, self-management, and relationship skills,^[7,8] males and females may be expected to respond to and benefit differently from SEL-based interventions.^[3,9] Indeed, some studies suggest that gender plays a moderating role in outcomes of classroom-based SEL interventions.^[10] Specifically, some studies have found males benefit more from SEL interventions^[11] including decreased violent behaviors,^[12] greater improvement in emotional self-concept development,^[13] and empathy.^[14] In contrast, a study of the Reach Out to Schools SEL program found that middle school aged female students exhibited significantly greater improvements than male students on its outcomes, including capacity for social connection and social engagement.^[9]

In a review of 19 meta-analyses published between 1997 and 2008, Diekstra and Gravestijn^[15] found that the vast majority of studies do not provide data on gender, and those that did failed to analyze their data by gender. The authors concluded that there is a lack of information on the relationship between gender and the efficacy of SEL programs. Such limited data and inconsistent findings on the potential moderating effect of gender on SEL program outcomes make research on potential gender differences in SEL outcomes imperative for ensuring a goodness-of-fit between SEL programs and the students they seek to serve.^[15]

Ethnicity

Recent studies suggest cultural background (or ethnicity) may be another important mediating demographic variable in the efficacy of adolescent SEL programs,^[16] in part because adolescents from diverse language and ethnic groups experience and respond to psychosocial stressors differently.^[17,18] For example, African-American adolescents are at a higher risk for internalizing and externalizing problems;^[19] Latino American children are at a higher risk for poor social-emotional outcomes;^[20] Asian American children display higher levels of internalizing emotions and may experience more stress in the context of peer relationships than other children;^[21] and Native American children are at higher risk for internalizing problems and for specific types of antisocial behavior.^[22]

Clearly, research studies need to focus on subgroups within the population to allow for a better understanding of the differential benefits SEL programs can provide. However, a meta-analysis of 180 studies involving classroom-based

SEL programs conducted by Payton *et al.*^[23] found that only a small number of studies collected data on ethnicity, and even those that did, did not analyze outcomes by ethnic subgroups. Furthermore, a meta-analysis of 75 school-based studies published between 1995 and 2008^[24] found that although ethnicity was reported in 48% of studies, unclear definitions and categories of ethnicity made it nearly impossible to identify different ethnic groups.^[24] Thus, it cannot be known whether ethnic subgroups benefitted equivalently or whether robust improvements in one group accounted for the significant findings in the total student population. Therefore, Diekstra and Gravestijn's^[15] recommendation that ethnicity and its relationship with program effectiveness deserves closer investigation remains imperative today.

Quieting the stress response: Physiological considerations

While aspects of human diversity affect the sources of and resilience toward stressors, human beings are wired to respond to the experience of stress or relaxation in identical ways. The current research suggests that an adolescent's ability to successfully learn, recall, and execute SEL skills is profoundly influenced by their physiological state. When individuals experience stress, the higher brain centers which enable them to suppress impulsive, destructive, and inappropriate responses; to develop, recall, and execute previously learned SEL skills; to constructively problem solve; and to focus attention are inhibited.^[25-27] In contrast, the physiological correlates of a calm individual support the brain's ability to engage in higher order cognitive processes needed for learning and executing SEL skills.^[28] Thus, integrating stress management techniques that directly induce physiological calm (such as breathing techniques, yoga, and meditation) into a formal SEL curriculum may be beneficial, yet very few studies exist. One such study using randomized controlled trials found that combining stress management, yoga, and breathing techniques with a SEL curriculum produced significantly greater reductions in maladjustment and antisocial behaviors than a purely SEL curriculum.^[29] Clearly, more studies are needed.

Controlled yoga breathing techniques for adolescents

Breathing techniques can be very effective in reducing stress, regulating emotions, and relaxing both mind and body.^[30,31] Experiencing situations and events as stressful results in a surge in the sympathetic nervous system activity (the fight or flight response). Since breathing is the only function of the sympathetic nervous system which can be consciously influenced (unlike heartbeat or digestion), it provides an effective tool for directly calming the stress response and simultaneously inducing calm (i.e., increasing parasympathetic activity).^[32] Breathing techniques are tools that students can easily learn and perform, even during emotionally charged situations, to induce immediate physiological relaxation and mental calm.^[33]

The present study

The current study adds to the existing SEL literature by examining the relationships between gender, ethnicity, and SEL outcomes of the Sudarshan Kriya Yoga (SKY) Schools program (formerly named Youth Empowerment Seminar – YES!). SKY Schools is a standardized biopsychosocial program which interweaves evidence-based controlled breathing techniques into a SEL curriculum designed to be appropriate across diverse gender and ethnic populations. Using SKY Schools as our targeted intervention further contributes to the literature by examining a biopsychosocial approach to SEL programing. We hypothesized that the SKY Schools approach would be associated with increases in positive outcomes (self-esteem, identity formation, anger coping ability, planning, and concentration) and decreased negative outcomes (impulsivity, distractibility, and endorsement of aggression) for all participants regardless of gender or ethnicity.

Methods

Participants

Fifty-nine New York City public high school students (20 male, 39 female) participated in this study. Students were offered the option of enrolling in SKY Schools as an alternative to their regular physical education class for 1 week. The participants were aged 14–16 years ($M = 15.63$, standard deviation $[SD] = 0.62$), and the self-reported ethnic backgrounds of participants are as follows: African-American/Black ($n = 15$), Latino/Hispanic ($n = 14$), white/non-Latino ($n = 14$), Mixed ($n = 7$), and Asian ($n = 6$).

Program description

The SKY Schools program has been taught to more than 150,000 students by certified instructors of the International Association of Human Values. The SKY Schools curriculum is highly experiential and interactive. It seeks to empower students to create a healthy body, a healthy mind, and a healthy lifestyle by offering practical life skills as well as specific techniques to manage stress and emotions.

The SKY Schools curriculum includes stretching and exercise, targeted breathing techniques documented to calm the stress response and increase focus, life skills for emotion regulation and conflict resolution, and life lessons on human values such as responsibility, respect, friendliness, kindness, and cooperation. SKY Schools expands the scope of traditional SEL programs by weaving into the curriculum evidence-based breathing and meditative techniques. A cornerstone of the training, Sudarshan Kriya is a standardized rhythmical breathing technique used in mainstream, at-risk, and clinical populations. It is practiced along with 2 preparatory breathing techniques, Victory Breath (an advanced form of Ujjayi which involves

breathing against airway resistance by tightening of the laryngeal muscles, alternating with breath holds) and Self-Esteem Breath (Bhastrika: rapid forceful breathing through the nose accompanied by arm movements). These three techniques, collectively referred to as SKY, have been shown to directly induce physiological calm,^[34] reduce impulsivity and regulate emotions and promote prosocial behavior.^[35,36]

Measures of social-emotional learning competencies

Because successful outcomes of SEL programs are linked to the development of core competencies,^[37] we examined SKY Schools participants' growth on seven constructs aligned to the development of core SEL competencies [Table 1].

Self-awareness

Self-awareness consists of the abilities to recognize one's own emotions and thoughts and how they affect behavior. This includes an accurate sense of positive self-esteem^[38] and during adolescence, a forming sense of identity.^[39]

Self-esteem

Participants' self-esteem was assessed using the 10-item Rosenberg Self-Esteem Scale (RSE),^[40] the most widely used self-report measure of adolescent self-esteem globally. Items assess personal worth, self-confidence, self-satisfaction, self-respect, and self-appreciation. They were presented on a 4-point Likert scale, ranging from "strongly agree" to "strongly disagree." Scores were summed and range from 0 to 30. This measure demonstrated strong internal consistency across assessment points ($\alpha = 0.78$ and 0.75 , at T1 and T2, respectively).

Identity formation versus identity confusion

Adolescent identity formation versus identity confusion was measured using the Identity subscale of the Erikson Psychosocial Inventory Scale (EPSI).^[41] This instrument was developed with subscales to assess the eight distinct and essential ego strengths present in Erickson's model of healthy psychosocial development. The EPSI Identity Subscale contains 12 items presented on a 5-point Likert scale, ranging from "almost always true" to "almost

Table 1: Study constructs aligned to social-emotional learning competencies (Durlak et al., 2011; Zins et al., 2004)

SEL competencies	Constructs assessed in the current study
Self-awareness	Self-esteem
	Identity formation
Self-management	Anger coping ability
	Distractibility
	Irritability
Relationship skills	Endorsement of aggression
Responsible decision-making	Planning and concentration

never true.” Scores are summed and range from 12 to 60, with higher scores signifying greater identity formation. Strong internal consistency was present across assessment points ($\alpha = 0.69$ and 0.79 at T1 and T2, respectively).

Self-management

Self-management is the ability to regulate thoughts, emotions, and behaviors.^[31] This includes coping with anger appropriately and the ability to manage negative emotions and impulses, such as irritability and distractibility. Several aspects of self-management were assessed using specific subscales of the Assessment of Liability and Exposure to Substance Use and Antisocial behavior (ALEXSA).^[42] The ALEXSA assesses internal predictors and early manifestations of substance use and antisocial behaviors over and above demographic characteristics. Its subscales are intended to be standalone measures for assessing both risk and protective factors.

Coping with anger

The ALEXSA Anger Coping Ability subscale (ACO) is an 8-item measure of volatility and impulse regulation. Using a 4-point Likert scale, ranging from “never” to “always,” ACO assesses the degree to which frustration is experienced and expressed with anger (e.g., When you have a problem at school or at home, do you throw things or break someone else’s things?). Scores are summed and range from 0 to 24. Strong reliability was present across assessment points ($\alpha = 0.78$ at T1 and 0.78 at T2).

Self-regulation/distractibility

The ALEXSA Distractibility subscale (DST) is a measure of the distractibility level experienced and the extent to which it interferes with functioning. A sample item is “How often do you have to be reminded several times to do things?” The DST subscale consists of 5 items answered on a 4-point Likert scale, with response choices ranging from “never” to “more than once a day.” Scores are summed and range from 0 to 15. Good internal consistency was present across assessment points ($\alpha = 0.66$ at T1 and 0.69 at T2).

Affective regulation

The ALEXSA Irritability subscale (IRR) is a 10-item measure of poor emotional regulation. It measures the ease of experiencing agitation as well as level of agitation (e.g., “When someone gets angry with you, do you get even more angry right back?”). The IRR subscale consists of 10 items scored on a 4-point Likert scale, ranging from “never” to “always.” Scores are summed and range from 0 to 30. Internal consistency ranged between good and excellent ($\alpha = 0.74$ and 0.63 at T1 and T2, respectively).

Relationship skills

Relationship skills comprise of abilities to establish and maintain relationships. This includes endorsing nonaggressive strategies to manage interpersonal conflict.

Aggressive normative beliefs

Student attitudes regarding the acceptable use of aggression were assessed using the 14-item Endorsement of Aggression Scale. Students were asked to indicate their agreement with statements that either endorsed or rejected aggressive behavior.^[43] This measure was selected because it assesses attitudes about verbal and relational aggression (e.g., if you are angry with someone, it is okay to keep them out of your group of friends) in addition to attitudes about physical aggression (e.g., there are only two kinds of kids – the kids who fight and the kids who get beat up). Scores are summed and range from 14 to 56. Strong consistency was present across assessment points ($\alpha = 0.74$ and 0.73 at T1 and T2, respectively).

Responsible decision-making

The competency of responsible decision-making involves the abilities to make prosocial choices for personal behavior and social interactions, such as the planning and concentration.

Planning and concentration

The ALEXSA Planning and Concentration Subscale (PAC) was used to assess three aspects of good self-control.^[44] The three indicators of good self-control include: (1) dependability (e.g., When I promise to do something you can count on me); (2) attentional control (e.g., I prefer to have many things going on at once rather than concentrate on only one thing); and (3) behavioral coping (e.g., When I have to wait in line, I do it patiently). The PAC subscale consists of 7 questions answered on a 4-point Likert scale, ranging from “very true” to “not at all true.” Scores are summed and range from 0 to 21. The PAC subscale demonstrated adequate internal reliability ($\alpha = 0.34$ and 0.42 at T1 and T2, respectively).

Procedure

SKY Schools consisted of a 3-h class held on five consecutive days after regular school hours, totaling 15 h of instruction. Pretesting (T1) was conducted 1 week before the intervention. Posttesting (T2) was administered on the last day of the SKY Schools program. Testing sessions lasted approximately 20–25 min. This study was approved by the New York City Public School Department of Education Institutional Review Board, and informed consent was obtained from the students’ parent/guardian before the beginning of the study.

Results

Before analysis, the data were checked for outliers and missing values as well as that it met the assumptions for our statistical analyses. A one-tailed paired-samples *t*-test was used to analyze mean differences before and after the program for all participants. Our decision to use one-tailed

tests is theoretically driven, based on previous findings in the literature. All seven measures demonstrated a statistically significant difference, suggesting improvements at posttest with Cohen's d values indicating effect sizes ranging from moderate to large [Table 2].

One of our goals was to examine whether there was comparable improvement associated with completing SKY Schools among males and females. Gender was therefore used as an independent variable in a repeated-measures ANOVA. There were no significant main effects for gender or any significant gender by program interactions, suggesting that the SKY Schools curriculum is associated with equivalent improvement for both male and female participants.

To examine whether there were differences in outcomes based on ethnicity, pretest and posttest score differences were calculated and two-tailed independent-samples t -tests were conducted between subgroups versus the rest of the sample. As there has not been any precedence regarding the effects of ethnicity on SEL outcomes, we decided to use two-tailed tests to be more conservative in our analysis. For the African-American group only, anger coping ability was significantly lower ($n = 12$, $M_{pre} = 24.0$, $M_{post} = 24.17$, $MD = 0.17$, $SD = 4.7$) than the rest of the sample ($n = 37$, $M_{pre} = 23.78$, $M_{post} = 26.43$, $MD = 2.6$, $SD = 3.3$), $t(47) = -2.02$, $P < 0.05$. There were no other significant differences for any measure based on ethnicity, suggesting that overall improvement associated with program participation was equal across ethnic subgroups.

Discussion

The results of the present study confirmed our hypothesis that SKY Schools would be associated with significant increases in positive constructs (self-esteem, identity formation, anger coping ability, planning, and concentration) and decreases in negative constructs (impulsivity, distractibility, and endorsement of aggression), reflective of enhanced SEL. Furthermore, each of the constructs

demonstrated robust effect sizes, with the SEL competencies of self-management (distractibility and irritability) showing large effects. Consistent with our expectations, improvements in outcomes after the intervention demonstrated no significant differences by gender or ethnicity, with one exception. For anger coping ability, one measure of self-regulation, African-American adolescents improved significantly less than non-African-American participants. However, there was no difference between African-American adolescents and the total cohort on the other two measures of self-regulation. This suggests that SKY Schools' biopsychosocial approach to SEL programming, with a curriculum specifically developed to be gender and culture appropriate, is associated with benefits in an adolescent population across genders and ethnicities.

Many programs teach emotion regulation and adaptive coping skills using didactic and discussion methods. The SKY Schools program moves beyond talk by including modules to directly calm the stress response, employing breathing and meditation practices. Our finding that all seven outcomes significantly improved in high school students completing SKY Schools' biopsychosocial training is encouraging. Many SEL programs only assess 3–4 outcomes, while this biopsychosocial approach was robustly associated with seven significant outcomes, which is less common in the SEL literature.^[14] Techniques which directly and beneficially impact adolescent physiology can transcend sociodemographic variables and may be understood to uniformly support successful program outcomes. Future studies comparing a standardized cognitive-based SEL program to the SKY Schools' biopsychosocial approach would allow for more causal inferences on the value of adding physiologically calming techniques to SEL curricula to be drawn.

Importantly, this study provided evidence of comparable benefits associated with SKY Schools participation in subgroups separated by gender and ethnicity. As discussed, while some studies report on the ethnic and gender composition of participants, they do not directly assess the relationship between these characteristics and program outcomes. Such studies, therefore, do not inform educators and policymakers as to whether or not the program equivalently benefits distinct minority subgroups. It remains possible that one ethnic or gender group that does very well on a measure may be responsible for the finding of significance, even if the program is not an appropriate match for other subgroups in the study.

The lack of equivalent improvement for African-American participants on anger coping ability could result from a number of reasons. The specific experiences of racism experienced by African-American adolescents and not experienced by members of the majority group may be a factor. For example, Clark^[45] found a link between the

Table 2: Results of paired samples t -test for entire sample

Constructs	n	M (SD)		t	Cohen's d
		Pretest	Posttest		
RSE	55	28.7 (4.5)	31.0 (4.1)	-4.48***	0.86
Identity conflict resolution	56	41.9 (7.6)	45.3 (8.5)	-3.60***	0.69
Anger coping ability	52	24.0 (4.7)	26.0 (4.0)	-3.77***	0.75
Distractibility	52	12.9 (3.6)	10.4 (3.0)	6.94***	1.38
Irritability	53	21.9 (5.1)	18.8 (3.9)	6.02***	1.21
Endorsement of aggression	53	24.7 (6.7)	22.9 (6.3)	2.38**	0.46
Planning and concentration	44	20.1 (3.1)	21.3 (3.0)	-3.18**	0.68

** $P < 0.01$, *** $P < 0.001$

perception of racism and cardiovascular reactivity – a physical correlate of anger. It is noteworthy, however, that there was no significant difference between African-Americans and the rest of the sample on the two other measures of emotion regulation (impulsivity and distractibility). This may suggest that for African-American youth, the anger coping aspect of emotion regulation might benefit from a longer time period of practicing SKY Schools techniques than was afforded in this study to demonstrate an effect. In addition, the small sample size of African Americans ($n = 12$) may be responsible for the inability to detect a significant effect for anger coping ability. Future studies with larger numbers of African-American youth would certainly help to answer this question.

Overall, from an efficacy perspective, this study's results suggest that SKY Schools may effectively attend to those ethnic-/gender-specific factors which impact the ability of SEL programs to achieve desired outcomes. The findings of the present study also suggest that instead of implementing multiple programs, youth can participate in a single program associated with improvements in multiple SEL factors, factors associated with increased academic success, and decreased maladaptive behaviors. Furthermore, implementing a program applicable to all youth, such as SKY Schools, removes the stigma of “special programs” for at-risk youth.

It increases the enrollment and successful completion of the program by providing a safe and supportive environment to grow, rather than one that focuses on overcoming problematic behavior.

As reported previously, studies on SEL programs often do not use standardized measures or report on their psychometric properties. Therefore, they provide insufficient data to determine the true effectiveness of the programs being evaluated.^[3] We addressed this limitation using standardized measures to evaluate the SEL factors under study. In addition, issues in the literature with consistency in naming and defining constructs make it difficult to draw comparisons across studies and inform SEL program decision-making. The present study sought to reconcile this problem by aligning our constructs to SEL competencies most discussed in the literature. The limitations of this study provide opportunities for further research. A randomized control experimental design with a larger sample size for subgroup populations is recommended to provide more concrete evidence as to the benefits of the program. Future studies should also examine which specific factors of the SKY Schools program support diverse ethnic and gender groups. Additional measures that include other constructs of SEL programs beyond the three examined in this study would be useful as well. Finally, research should also examine how the SEL outcomes documented translate into positive coping skills and desired outcomes outside the classroom, such as increasing prosocial behavior and reducing negative risk behaviors.

The present study adds to the small, yet growing body of literature examining the relationship between sociodemographics and SEL program outcomes. Our findings suggest that SKY Schools was equally associated with positive outcomes across gender and diverse ethnic groups. Such demographics are only the tip of the iceberg; future studies must consider these and additional sociocultural factors (such as socioeconomic status and school composition) to learn how to best promote SEL programs and foster positive outcomes. The present study also demonstrates that multiple positive outcomes are associated with a comprehensive biopsychosocial model such as SKY Schools. Exploring the role of stress management in conjunction with sociodemographic characteristics holds great promise in identifying maximally effective programs to allow our adolescents to flourish in society.

Financial support and sponsorship

Nil.

Conflicts of interest

The first author is an employee of the International Association for Human Values.

References

1. Zins JE, Elias MJ. Social and emotional learning. In: Bear GG, Minke KM, editors. *Children's Needs III: Development, Prevention, and Intervention*. Bethesda, MD: National Association of School Psychologists; 2006. p. 1-13.
2. Collaborative for Academic, Social, and Emotional Learning. *2013 CASEL Guide: Effective Social and Emotional Learning Programs Preschool and Elementary School*. Chicago, IL: Collaborative for Academic, Social, and Emotional Learning; 2013.
3. Durlak JA, Weissberg RP, Dymnicki AB, Taylor RD, Schellinger KB. The impact of enhancing students' social and emotional learning: A meta-analysis of school-based universal interventions. *Child Dev* 2011;82:405-32.
4. Hamedani MG, Zheng X, Darling-Hammond L, Andree A, Quinn B. *Social Emotional Learning in High School: How Three Urban High Schools Engage, Educate, and Empower Youth Cross-Case Analysis*. Stanford, CA: Stanford Center for Opportunity Policy in Education; 2015.
5. Malter Cohen M, Tottenham N, Casey BJ. Translational developmental studies of stress on brain and behavior: Implications for adolescent mental health and illness? *Neuroscience* 2013;249:53-62.
6. McCraty R, Atkinson M, Tomasino D, Goelitz J, Mayrovitz HN. The impact of an emotional self-management skills course on psychosocial functioning and autonomic recovery to stress in middle school children. *Integr Physiol Behav Sci* 1999;34:246-68.
7. Card NA, Stucky BD, Sawalani GM, Little TD. Direct and indirect aggression during childhood and adolescence: A meta-analytic review of gender differences, intercorrelations, and relations to maladjustment. *Child Dev* 2008;79:1185-229.
8. Copeland EP, Hess RS. Differences in young adolescents' coping strategies based on ethnicity and gender. *J Early Adolesc* 1995;15:203-19.

9. Taylor C, Liang B, Tracy A, Williams L, Seigle P. Gender differences in middle school adjustment, physical fighting, and social skills: Evaluation of a social competency program. *J Prim Prev* 2002;23:259-72.
10. Johnson DP, Whisman MA. Gender differences in rumination: A meta-analysis. *Pers Individ Dif* 2013;55:367-74.
11. Conduct Problems Prevention Research Group. The effects of a multiyear universal social-emotional learning program: The role of student and school characteristics. *J Consult Clin Psychol* 2010;78:156-68.
12. Shapiro J, Burgoon J, Welker C, Clough J. Evaluation of the peacemakers program: School-based violence prevention for students in grades four through eight. *Psychol Sch* 2001;39:87-100.
13. Coelho V, Sousa V, Figueira AP. The impact of a school-based social and emotional learning program on the self-concept of middle school students. *Psicodidactica* 2014;19:347-65.
14. Castillo R, Salguero J, Fernández-Berrocal P, Balluerka N. Effects of an emotional intelligence intervention on aggression and empathy among adolescents. *J Adolesc* 2013;36:883-92.
15. Diekstra R, Gravestijn C. Part one: A review of meta-analytic literature reviews in social and emotional education. In: Clouder C, Heys B, editors. *Social and Emotional Education: An International Analysis*. Santander, Spain: Fundacio en Marcelino Botin; 2008. p. 258-84.
16. Garner PW, Mahatmya D, Brown EL, Vesely CK. Promoting desirable outcomes among culturally and ethnically diverse children in social emotional learning programs: A multilevel heuristic model. *Educ Psychol Rev* 2014;26:165-89.
17. Castro-Olivo SM, Palardy G, Albeg L, Williamson AA. Validation of the coping with acculturative stress in American schools (CA SAS) Scale. *J Assess Eff Interv* 2013;40:3-15.
18. Castro-Olivo SM, Merrell KW. Validating cultural adaptations of a school-based social-emotional learning program for use with Latino immigrant adolescents. *Adv Sch Ment Health Promot* 2012;5:78-92.
19. Allen L, Majidi-Ahi S. Black American children. In: Gibbs JT, Huang LN, editors. *Children of Color: Psychological Interventions with Minority Youth*. New York: Jossey Bass; 1998. p. 148-78.
20. Blanco-Vega CO, Castro-Olivo SM, Merrell KW. Social and emotional needs of Latino immigrant adolescents: An ecological model for developing planning and implementing culturally sensitive interventions. *J Latinos Educ* 2008;7:43-61.
21. Liew J, Castillo LG, Chang BW, Chang Y. Temperament, self-regulation, and school adjustment in Asian American children. In: Leong F, Juang L, Qin DB, Fitzgerald HE, editors. *Asian American and Pacific Island Children's Mental Health (Development and Context)*. Vol. 1. Westport: Praeger Publishers; 2011. p. 119-39.
22. Cummins JR, Ireland M, Resnick MD, Blum RW. Correlates of physical and emotional health among Native American adolescents. *J Adolesc Health* 1999;24:38-44.
23. Payton J, Weissberg RP, Durlak JA, Dymnicki AB, Taylor RD, Schellinger KB, *et al.* The Positive Impact of Social and Emotional Learning for Kindergarten to Eighth-grade Students: Findings from Three Scientific Reviews. Chicago, IL: Collaborative for Academic, Social, and Emotional Learning; 2008.
24. Sklad M, Diekstra R, de Ritter M, Ben J, Gravestijn C. Effectiveness of school-based universal social, emotional, and behavioral programs: Do they enhance students' development in the area of skill, behavior, and adjustment? *Psychol Sch* 2012;49:892-909.
25. Arnsten AF. Stress signalling pathways that impair prefrontal cortex structure and function. *Nat Rev Neurosci* 2009;10:410-22.
26. Mikolajczak M, Roy E, Luminet O, Fillée C, de Timary P. The moderating impact of emotional intelligence on free cortisol responses to stress. *Psychoneuroendocrinology* 2007;32:1000-12.
27. Wilson BJ, Derryberry D, Kroeker R. A computerized task for investigating the relation between attentional and emotional processes in children. *J Genet Psychol* 2006;167:415-31.
28. Koole S. The psychology of emotion regulation: An integrative review. *Cogn Emot* 2009;23:4-41.
29. Kannappan R, Lakshmi B. Efficacy of yoga: Cognitive and human relationship training for correcting maladjustment behaviour in deviant school boys. *J Indian Acad Appl Psychol* 2008;34:60-5.
30. Broderick PC, Frank JL. Learning to BREATHE: An intervention to foster mindfulness in adolescence. *New Dir Youth Dev* 2014;2014:31-44.
31. Zope SA, Zope RA. Sudarshan kriya yoga: Breathing for health. *Int J Yoga* 2013;6:4-10.
32. Sakakibara M, Hayano J. Effect of slowed respiration on cardiac parasympathetic response to threat. *Psychosom Med* 1996;58:32-7.
33. Sharma A, Newberg AB. Mind-body practices and the adolescent brain: Clinical neuroimaging studies. *Adolesc Psychiatry (Hilversum)* 2015;5:116-24.
34. Brown RP, Gerbarg PL. Sudarshan kriya yogic breathing in the treatment of stress, anxiety, and depression: Part I-neurophysiologic model. *J Altern Complement Med* 2005;11:189-201.
35. Ghahremani DG, Oh EY, Dean AC, Mouzakis K, Wilson KD, London ED. Effects of the youth empowerment seminar on impulsive behavior in adolescents. *J Adolesc Health* 2013;53:139-41.
36. Goldstein MR, Lewis GF, Newman R, Brown JM, Bobashev G, Kilpatrick L, *et al.* Improvements in well-being and vagal tone following a yogic breathing-based life skills workshop in young adults: Two open-trial pilot studies. *Int J Yoga* 2016;9:20-6.
37. Zins J, Weissberg R, Wang M, Walberg H. *Building Academic Success on Social and Emotional Learning: What does the Research Say?* New York: Teachers College Press; 2004.
38. Erol RY, Orth U. Self-esteem development from age 14 to 30 years: A longitudinal study. *J Pers Soc Psychol* 2011;101:607-19.
39. Côté J. Identity formation and self development in adolescence. In: Lerner R, Steinberg L, editors. *Handbook of Adolescent Psychology*. Vol. 1. 3rd ed. New York: Wiley; 2009. p. 266-304.
40. Rosenberg M. *Society and the Adolescent Self-image*. Princeton, NJ: Princeton University Press; 1965.
41. Rosenthal DA, Gurney RM, Moore SM. From trust on intimacy: A new inventory for examining Erikson's stages of psychosocial development. *J Youth Adolesc* 1981;10:525-37.
42. Ridenour TA, Clark DB, Cottler LB. The illustration-based assessment of liability and EXposure to substance use and antisocial behavior for children. *Am J Drug Alcohol Abuse* 2009;35:242-52.
43. Van Schoiack-Edstrom L, Frey KS, Beland K. Changing adolescents' attitudes about relational and physical aggression: An early evaluation of a school-based intervention. *Sch Psychol Rev* 2002;31:201-16.
44. Wills TA, Sandy JM, Shinar O. Cloninger's constructs related to substance use level and problems in late adolescence: A mediational model based on self-control and coping motives. *Exp Clin Psychopharmacol* 1999;7:122-34.
45. Clark R. Self-reported racism and social support predict blood pressure reactivity in blacks. *Ann Behav Med* 2003;25:127-36.