

Spiritual Education Program for Reducing Social Anxieties and Improving Social Interaction Skills Among Introverted Children: A Cross-Country Longitudinal Experimental Study

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Abstract This article reports on a longitudinal experimental study with 3,227 introverted children aged 6–8 years from 15 countries on the effects of a spiritual education program (SEP) in reducing social interaction phobia and anxieties and improving social interaction skills. The pre- and post-test scores of the treatment group children were examined and compared with the scores of the control group on the following measures: the play interaction dimension of the Penn Interactive Peer Play Scale (PIPPS-PI), the Social Phobia and Anxiety Inventory for Children (SPAI-C), and the Children’s Self-Efficacy in Peer Interaction Scale (CSPI). Results showed that the scores of the control group and pre-test scores of the treatment group were lower on the PIPPS-PI and CSPI and higher on the SPAI-C. Post-test or post-SEP scores of the treatment group children were higher on the PIPPS-PI and CSPI and lower on the SPAI-C. Boys, upper-middle-class children, Christians, children who lived with both their parents, children who did three or four rounds of the SEP, and children who regularly self-practiced scored higher on the PIPPS-PI post-test. Post-treatment CSPI scores were higher for children from affluent countries. The most effective predictors of higher post-test CSPI scores were the number of rounds of SEP and self-practice. Results suggest the importance of SEP for introverted children who experience social interaction anxieties.

Keywords Spirituality · Spiritual education program · Social anxieties · Social interaction skills · Social phobia · Introverted children · Longitudinal study

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Introduction

Personality types and differences and specifically the introversion-extraversion continuum have been extensively researched. The fundamental difference is that introverts focus more on their inner lives and extraverts rely more on external stimuli (Kantor-Martynuska 2009). Even in children, the introverted personality is characterized by an orientation in life through subjective psychic contents; as indicated by the popular Myers-Briggs Type Indicator (MBTI), introverted children focus on their own inner world more than on the outer objective world. Hans Eysenck's (1967) arousal theory proposes that introverts have higher levels of cortical arousal than extraverts and thus their brains are stimulated on an ongoing basis, whereas extraverts have quieter brains. Hence, introverted children tend to pull away from external stimuli and extraverts seek out more (Borkenau et al. 2009).

In the domain of social interactions, therefore, extraverts have a clear advantage when compared to their introverted counterparts. Traditionally, there is theoretical support for the social competence of extraverts and their natural proclivity towards social interactions (Eysenck 1997). Empirical evidence for the extraversion-social interaction link is dominated by correlational analysis. Personality factors in the context of social interactions and social relationships have been conceptualised with increasing sophistication, moving from interactionism to the social relations model and the personality and social relationships approach (Back et al. 2011). The latter model has moved away from a unidirectional focus in terms of showing that particular personalities exert a distinctive behavioral press or force (for instance, extraverted personalities are more sociable and introverted personalities are more reticent) to broadened ideas of the reciprocal force of dispositions in dynamic interactions, with dispositional behaviors sometimes yielding and sometimes pushing back. This is akin to the free trait theory, which proposes that people tend to act out of character, i.e., distinct from their basic personalities, for core personal projects and in order to achieve desired goals (Little 2011). But an individual's basic personality/disposition is nonetheless dominated by a particular type (Mulder and van Aken 2014).

Research shows that introverted children experience social interaction difficulties (Lee et al. 2009) that can sometimes escalate to anxieties. Introverts tend to be slow to warm up to others, are hesitant, and are enigmatic in social interactions. For example, introversion has been found to be associated with conversational hedging, privacy, and detail-oriented contemplation. Introverts have fewer friends (Selfhout et al. 2010), and they put less of a premium on sociability and the pleasure of social interactions.

Introverted children are thus exposed to several risks when they are true to their introverted nature, alienation being one. This means that they either embrace the alienation and become shadow dwellers and have a low profile, sometimes openly hostile to the mainstream and hence paranoid, or they become self-alienated and perform in ways that are socially accessible, which is contrary to their basic disposition (Flanagan et al. 2008; Helgoe 2008; Nelson et al. 2011).

Correlational research states unequivocally that a positive association exists between social anxiety and victimization by peers in children between 6 and 14 years of age (e.g., Hawker and Boulton 2000). Characteristic behaviors of socially anxious children, such as conflict avoidance, fear of rejection, unassertiveness, visible anxiousness, and poor social skills (Miers et al. 2010), make them easy targets for bullies. Hence, there are anxious solitary or withdrawn children. Particularly in late childhood, children who are victimized tend to have lower levels of agreeableness, extraversion, and conscientiousness and higher levels of neuroticism (e.g., Bollmer et al. 2006). But socially anxious children who score high on the behavioral trait of

agreeableness experience low peer rejection and low victimization. This is because these children may be able to display responsive social behavior, such as sharing, listening to others, and cooperating. Although these children may not take the initiative to interact with peers, the ability to show socially desirable behavior in response to peers could protect them from victimization (Gazelle 2008).

The fact nonetheless remains that oppressive standards of extroversion and the ease of social interactions that accompanies an extraverted personality type negatively impact the acceptance of introverted children (Bogels et al. 2010; Cain 2013; McDowell 2012). Although this leads to social anxiety, evidence needs to be generated to examine whether social competence and interaction proclivity can be bolstered and eased for introverts with some training and treatment inputs. The focus thus needs to be shifted from the trait of introversion among children to the real deficit, which is the limited social/peer interaction competence and social anxiety that could be impeding development. The question that is then to be answered is as follows: if introversion is a recognized personality trait among children (Helgoe 2008), then how does one promote social interaction competencies, efficacy, and proclivity among introverted children and reduce social anxieties so that they can stay within their disposition or character and yet attain an optimum level of social functioning?

Research on therapeutic interventions with children now foregrounds the importance of spirituality (Minor and Grant 2014; Surr 2016). Spirituality and related intervention techniques are widely used with children to address pathological issues of anxiety, depression, and distress caused by triggering factors such as bereavement and loss (Fisher 2015; Mata-McMahon 2016). Further, through the positive psychology lens, spiritually sensitive interventions are also said to promote mental health and well-being among children (Hyde 2010), which are indicative of well-managed stress and anxieties.

Spirituality is a complex construct that refers to discourses on self, transcendence through connections between the self and the Absolute or higher power, and relational consciousness through connections between self and others. Spiritually sensitive interventions for children encompass a range of techniques, such as meditation, stilling, and mindfulness, that are aimed at promoting both inward looking or centering and meaningful outward looking or relational consciousness (Nye 2009).

Present study and hypotheses

Despite the deficit in social interaction ability among introverted children and the given the propensity of spiritually sensitive interventions to promote meaningful relations with significant others, no research has thus far examined the efficacy of spiritual education programs (SEP) on outcome measures of reduced social anxieties and enhanced relational skills among introverted children, a gap that this study addresses. The present study thus aims to examine whether and how spirituality improves the social interactions and reduces the social anxieties of introverted children aged 6–8 years across country contexts.

The following hypotheses for this study have been drawn from theory and research:

Hypothesis 1: Introverted children experience a deficit in social interaction competence and proclivity and hence enhanced social anxieties.

Hypothesis 2: Spirituality and a customized SEP would have the potential to address introverted children's social interaction competence deficits and social anxieties. The

training could be tailored to enhance their relational consciousness and social and peer interaction proclivities and efficacies.

Hypothesis 3: Post-test scores of the treatment group children on the peer interaction scales would be higher than their own pre-test scores and the scores of control group introverts who have not undergone the SEP. Similarly, social anxiety and phobia scale scores would decline post treatment.

Hypothesis 4: Sociodemographic and spirituality-related variables, i.e., rounds of SEP and self-practice and engagement in SEP, would influence the post-test outcome measures.

Data and methods

This study was designed to examine the effects of a SEP to improve social interaction skills and reduce social anxieties among 6–8 year old introverted children across country contexts. Specifically, the objectives are to study the differences between the control and treatment group children's scores and the pre- and post-test scores of the treatment group on the (1) play interaction dimension of the Penn Interactive Peer Play Scale (PIPPS-PI), (2) Social Phobia and Anxiety Inventory for Children (SPAI-C), and (3) Children's Self-Efficacy in Peer Interaction Scale (CSPI). To examine the treatment effect, a cross-country experimental design was used.

Sampling

Sampling was done in stages. At the first stage, 15 countries were identified based on global coverage and contacts with primary schools or associations in various countries. At the second stage, 12 schools in each of the countries were selected and contacted and permissions were secured from the school authorities to approach their students and wards to participate in the experiment. All schools were private schools that catered to upper-middle-class and elite children in the respective countries.

School counselors' reports from the schools were used to identify potentially introverted children during phase 1 of the third stage of sampling. Participant selection was confirmed through an introversion checklist (Sword 2003), which contained a list of 25 behavior indicators for introversion scored on a 5-point rating of 1 = *strongly disagree* to 5 = *strongly agree*. Scoring was done by a parent or guardian who observed the child closely. The scores range from 25–125, with higher scores indicating greater introversion. The 25 statements of the checklist describe traits of introversion (e.g., is reflective, needs privacy) and proclivity to be socially anxious (e.g., dislikes being the centre of attention even when the attention is positive, dislikes meeting strangers). Eysenck's operational definition of introversion, grounded in his two- and three-dimensional models of personality, assumes introversion and anxiety to be orthogonal. The MBTI model includes indicators of anxiety conceived as integral to specific personality types, and the neuroticism component of the five-factor model focuses on anxiety (DeYoung et al. 2007). The Sword introversion checklist combines trait and anxiety indicators and operationalizes introversion or an introverted personality and behavior as reflective traits, privacy, selective and limited social interactions and relationality, conscientiousness, prudence, reticence, social interaction anxiety, and anxiousness. This is juxtaposed

with extraversion traits such as impulsiveness, wide social interactions and gregariousness, thinking aloud, ease of expression, expansiveness, adaptability, assertion and social ease, and comfort with being in the limelight. Local investigators administered Lesley Sword's introversion checklist with the children identified by counselors in each of the schools through their parents or guardians.

From the 180 schools, an aggregate of 6,454 parents and their introverted wards consented to participate in the study, including the SEP. Based on norms of the experimental design, using random number tables, 3,227 children and their guardians were assigned to the treatment group and a similar number to the control group for round 1 of the study, the results of which are reported here.

Methods

A schedule developed in the English language comprising basic background questions and the three scales to measure social interaction proclivity and social anxiety among the introverted children was used, apart from the introversion checklist that served as a qualifier in recruiting study participants. The schedule, scales, and checklist were translated into German, French, and Mandarin using the services of professional translators, and the method of translation, back translation and re-translation, and translation validity were reconfirmed through the pilot test phase.

Scales description

Three scales were used to measure the pre- and post-test social interactions of the children.

- A. The Penn Interactive Peer Play Scale (PIPPS; Fantuzzo et al. 1995) is a 32-item behavioral rating instrument useful for understanding peer play behaviors and for meeting the need for congruent play assessment measures for parents and teachers across settings during early childhood (Fantuzzo and McWayne 2002). The PIPPS has parallel versions for parents and teachers and for preschool and kindergarten-age children. The parent version (which was used in this study) assesses play in the home and neighborhood, whereas the teacher version examines play at school. The parent version contains 32 four-point Likert-scale items that indicate how often the behavior has been observed during free play (i.e., *never*, *seldom*, *often*, or *always*). To identify children's strengths and weaknesses, the PIPPS includes descriptions of positive and negative play interactions. Three reliable dimensions are studied: play interaction (12 items), play disruption (10 items), and play disconnection (10 items). The play interaction factor includes items that describe cooperation, helpful behaviors, and creative behaviors that contribute to successful peer play interactions. The play disruption factor describes aggressive, antisocial behavior that interferes with ongoing peer play interactions, whereas play disconnection examines nonparticipatory behaviors in play interactions with peers. Scoring is done separately for the interaction, disruption, and disconnection factors, with respective scores for ranges of play interaction (12–48), play disruption (10–40), and play disconnection (10–40), and higher scores on the dimensions indicate higher interaction, disconnection, and disruption, respectively. For the present study, the PIPPS-play interaction dimension (PIPPS-PI) parent version was used (Cronbach $\alpha = 0.92$; item-scale intercorrelation = 0.92; Pearson's $r = 0.92$].

- B. The Social Phobia and Anxiety Inventory for Children (SPAI-C) developed by Beidel et al. (1995) is a self-completion instrument with 26 items rated on a 3-point scale (0 = *never or hardly ever*, 1 = *sometimes*, and 2 = *almost always*). It is empirically derived and designed to assess potentially anxiety-producing situations (e.g., reading aloud, attending social functions). The SPAI-C also assesses the physical and cognitive manifestations of social anxiety. Total scores range from 0–52, with higher scores indicating greater social phobia and anxiety among children and vice versa (Cronbach $\alpha = 0.92$; item-scale intercorrelation = 0.93; Pearson's $r = 0.95$).
- C. The Children's Self-Efficacy in Peer Interactions Scale (CSPI) developed by Wheeler and Ladd (1982) is designed to measure children's perceptions of their own efficacy in terms of being successful in social interactions. This includes their ability to be persuasive with peers in positive ways. The questionnaire contains two subscales that measure social self-efficacy in conflict and non-conflict situations. The subscales can be used separately or combined into a total score. The scale contains 22 items scored on a 4-point rating scale as 1 = *HARD!*, 2 = *Hard*, 3 = *Easy*, and 4 = *EASY!* The subscale items are summed to produce total scores. Ten items measure efficacy in conflict situations, and 12 items do so in non-conflict situations. For the present study, all 22 items were combined to produce a cumulative score ranging from 22–88, with higher scores indicating greater children's perceived self-efficacy in peer interactions (Cronbach $\alpha = 0.91$; item-scale intercorrelation = 0.92; Pearson's $r = 0.91$).

Spiritual Education Program (SEP)

The SEP was developed by four experts associated with spiritual organisations (two experts were associated with Christian organisations, one member was associated with Buddhist organisations, and one member was associated with Hindu-inspired movements). The experts were contacted as independent resource persons who had experience in developing and conducting self-help and SEP programs for groups across the lifespan. Two roundtable meetings were conducted with the experts and with the volunteers who would then implement the training package. The purpose of the roundtable discussions was to arrive at a diversity-accommodating package that could be administered with 6- to 8-year-olds across country and cultural contexts. The five-day package of two-hour lessons per day was thus developed with the focused aim of developing the relational consciousness of 6–8 year olds, which would then aid their social interaction competence and reduce their social anxieties.

One round of the SEP was comprised of the following five thematic lessons of two-hours duration each: (1) understanding self, being at peace with self and disposition, and centering/stilling; (2) viewing self in relation to similar and different significant others, i.e., relational consciousness; (3) establishing meaningful relationships with significant others; (4) addressing and overcoming fears and anxieties; and (5) imbibing universal ethics of peace, cultivating unconditional love for others, and maintaining happiness.

Within each of the lessons, lecture demonstrations and experiential activities were planned. The program was to be conducted four times in a year, and two rounds of the program were mandatory and the third and the fourth rounds were optional. The lessons of the first two rounds comprised a mix of lectures and exercises. The third and the fourth rounds were primarily based on experiential exercises.

Self-engagement through self-practice was embedded in the program design, with each session and round having take-home lessons and self-immersion do-it-yourself exercises (e.g., talk to a stranger today and note your feelings and fears in a diary; practice some public speaking in front of your neighbors; initiate a game with your friends by explaining the game and its rules and the roles of different players, and similar other exercises).

Experiment protocol

The pilot study was conducted in 2011–2012 with 142 treatment group children and their guardians from two schools in India and the United Kingdom and an equal number in the control group. Based on the positive test results, the experiment was upscaled to a multi-country study. One school counselor/authority per school was nominated as the nodal person, and one investigator (recruited for the pre- and post-test study phases to administer the schedules) was assigned to 10 schools for pre- and post-test data collection. Investigators were third-year bachelor's degree students or master's degree students in the social science and counseling psychology disciplines (psychology, sociology, child development). Pre-test data was collected across 180 schools at the beginning of the year 2013 (January–February) by investigators trained in schedule administration, the scales, and the use of electronic tablets. Online training was provided to the nodal persons and investigators, and continuous online support was offered to overcome e-training limitations. Fifteen trained personnel voluntarily conducted the SEP for the 3,227 treatment group children in batches by school between March 2013 and February 2014, one round per school in each quarter. Post-treatment data was collected by the investigators re-recruited between March and April 2014. Investigators and nodal persons were provided a small honorarium in the form of a book gift voucher from philanthropic grants in the pre- and post-test phases.

Analysis

Data was analysed using the STATA 13 computer package. One-way and multiple factorial analyses of variance examined the pre- and post test scores of the treatment group on the peer and social interaction and social anxiety scales. The paired *t*-test compared the pre-test and post-test scores and the control and treatment group scores. Further, the significant mediators and predictors of the post-test scores on the CSPI were examined through a hierarchical regression model.

Treatment group children's profile

The country-wise distribution of the children in the treatment group was as follows: India (7%), China (7%), Japan (5%), Singapore (5%), Egypt (5%), South Africa (6%), Saudi Arabia (5%), France (8%), Germany (7%), Sweden (6%), Norway (6%), United Kingdom (8%), United States (12%), Canada (7%), and Australia (6%). Approximately 23% of the children were 6 years old, 34% were 7 years old, and 43% were 8 years old. Around 56% were boys and 44% were girls. Roughly 62% of the children in the treatment group were Christians, 12% were Hindus, 16% were Muslims, 6% were Buddhist, and 4% were Jews. Based on the country-wise per capita income indicators, the majority (72%) of the children belonged to the upper middle class, and 28% of these belonged to the elite strata of society. Around 89% of the children lived with both parents, and 11% lived with a single parent. Of the 89% who lived

with both the parents, 76% of their fathers and 65% of their mothers had a university degree; 12% of the fathers and 26% of the mothers had up to a high school level of education; and 12% of the fathers and 9% of the mothers had professional degrees. Of the 11% of the children who lived with a single parent, 90% lived with their mother and 10% lived with their father. Among the single parents, the majority (95%) had a professional degree and 5% had a basic university degree. In terms of parental occupation, 57% of the children had both parents working outside the home and 43% of them had one parent working outside the home and one stay-at-home parent. During the study period, 58% of the children completed three or four rounds of the SEP and 42% of them did the mandatory two rounds of the SEP. Approximately 61% of the children said that they regularly self-practiced the SEP, and 39% of them said that they did so occasionally.

Control group children's profile

The country-wise profile of the control group children was the same as that of the treatment group. Approximately 24% of the control group children were 6 years old, 31% were 7 years old, and 45% were 8 years old. Around 58% were boys and 42% were girls. Roughly 67% of the control group children were Christians, 11% were Hindus, 17% were Muslims, 3% were Buddhist, and 2% were Jews. Based on the country-wise per capita income indicators, the majority (76%) of the control group children belonged to the upper middle class, and 22% of them belonged to the elite strata of society. Around 92% of the control group children lived with both parents and 8% lived with a single parent. Of the 92% who lived with both parents, 79% of the fathers and 68% of the mothers had a university degree; 8% of the fathers and 25% of the mothers had up to a high school level of education; and 13% of the fathers and 7% of the mothers had a professional degree. Of the 8% who lived with a single parent, 90% of them lived with their mother and 10% lived with their father. Among the single parents, the majority (98%) had a professional degree and 2% had a basic university degree. In terms of the parental occupation of control group children, 59% of the children had both parents working outside the home and 41% had one parent working outside the home and one stay-at-home parent.

Results

The results present the mediators and the comparison between the scores of the control group and the treatment group, both pre- and post-test, on the PIPPS-PI, SPAI-C, and CSPI. Further, the most significant predictor of the post-test CSPI scores of the treatment group children was examined through a five-step hierarchical regression model.

Penn Interactive Peer Play Scale—Play Interaction Dimension (PIPPS-PI)

Control group pre- and post-test The average pre- and post-test score of the control group on the PIPPS-PI was 23.48 ($SD = 1.09$). One-way analyses of variance showed that the effects of gender and class were significant. Post hoc analysis using the Scheffé post hoc criterion for significance indicated that the average PIPPS-PI scores were significantly higher for control group boys vs. girls, $F(1, 3226) = 67.21, p = 0.02$; and, for upper-middle-class children vs. elite class children, $F(1, 3226) = 90.21, p = 0.00$.

Treatment group pre-test The average pre-test score of the treatment group on the PIPPS-PI was 24.73 ($SD = 1.02$). One-way analyses of variance showed that the effects of gender, class, and living arrangements were significant. Post hoc analysis using the Scheffé post hoc criterion for significance indicated that the average pre-test PIPPS-PI scores were significantly higher for treatment group boys vs. girls, $F(1, 3226) = 98.21, p = 0.03$; for upper-middle-class children vs. elite-class children, $F(1, 3226) = 68.92, p = 0.03$; and for children who lived with both parents vs. with single parents, $F(1, 3226) = 89.03, p = 0.02$.

Treatment group post-test The average post-test score of the treatment group on the PIPPS-PI was 33.56 ($SD = 2.03$). One-way analyses of variance showed that the effects of gender, class, religion, living arrangements, rounds of SEP, and self-practice were significant. Post hoc analysis using the Scheffé post hoc criterion for significance indicated that the average post-test PIPPS-PI scores were significantly higher for treatment group boys vs. girls, $F(1, 3226) = 98.23, p = 0.03$; for upper-middle-class children vs. elite-class children, $F(1, 3226) = 86.24, p = 0.03$; for Christian children vs. Hindu, Muslim, Buddhist, and Jewish children, $F(4, 3226) = 98.23, p = 0.03$; for children living with both parents vs. those living with a with single parent, $F(1, 3226) = 89.33, p = 0.02$; for children who did three or four rounds of the SEP during the study period vs. those who did the mandatory two rounds, $F(1, 3226) = 90.23, p = 0.02$; and for children who regularly self-practiced the SEP tenets vs. those who did so occasionally, $F(1, 3226) = 93.24, p = 0.02$.

The post-test PIPPS-PI scores of the treatment group were further subjected to a MANOVA with six independent variables, i.e., gender, class, religion, living arrangements, rounds of SEP, and self-practice. Significant associations were examined further by non-parametric testing (Kruskal-Wallis). All individual associations were significant. The interaction effect between class and rounds of SEP was significant (Roy's largest root = 0.0827182, $F(1, 3226) = 103.25, p = 0.00$). The interaction effect between rounds of SEP and self-practice was also significant (Roy's largest root = 0.0928172, $F(1, 3226) = 98.23, p = 0.01$).

Comparison The average post-test PIPPS-PI score of the treatment group was higher than the control group's average scores, $t(3226) = 79.03, p = 0.00$ and also higher than their own pre-test scores, $t(3226) = 89.33, p = 0.00$.

Social Phobia and Anxiety Inventory for Children (SPAI-C)

Control group pre- and post-test The average pre- and post-test score of the control group on the SPAI-C was 36.23 ($SD = 2.98$). One-way analyses of variance showed that the effects of gender and class were significant. Post hoc analysis using the Scheffé post hoc criterion for significance indicated that the average SPAI-C scores were higher for control group girls vs. boys, $F(1, 3226) = 56.28, p = 0.00$; and, for elite children in the control group vs. upper-middle-class children, $F(1, 3226) = 78.32, p = 0.02$.

Treatment group pre-test The average pre-test score of the treatment group children on the SPAI-C was 37.32 ($SD = 2.03$). One-way analyses of variance showed that the effects of

gender, class, and living arrangements were significant. Post hoc analysis using the Scheffé post hoc criterion for significance indicated that the average pre-test scores of the treatment group on the SPAI-C were significantly higher for girls vs. boys, $F(1, 3226) = 68.99, p = 0.03$; for elite children vs. upper-middle-class children, $F(1, 3226) = 69.87, p = 0.01$; and, for children who lived with single parents vs. those who lived with both parents, $F(1, 3226) = 90.38, p = 0.03$.

Treatment group post-test The average post-test SPAI-C score of the treatment group children was 20.31 ($SD = 2.99$). One-way analyses of variance showed that the effects of country, parental occupation, rounds of SEP, and self-practice were significant. Post hoc analysis using the Scheffé post hoc criterion for significance indicated that the average post-test SPAI-C scores were lower for children from European countries, the United States, the United Kingdom, Canada, and Australia vs. those from Asian and African countries, $F(14, 3226) = 87.23, p = 0.03$; for children whose both parents worked outside home vs. those who had at least one stay-at-home parent, $F(1, 3226) = 54.23, p = 0.03$; for those who did three or four rounds of the SEP vs. those who did the mandatory two rounds, $F(1, 3226) = 38.98, p = 0.02$; and, for those who self-practiced regularly ($M = 18.87, SD = 2.08$) vs. those who did so occasionally ($M = 27.63, SD = 2.09$), $F(1, 3226) = 68.98, p = 0.02$. The post-test SPAI-C scores of the treatment group children were further subjected to a four-way analysis of variance with two levels each of country (European countries, United States, United Kingdom, Canada, and Australia; Asian and African countries); parental occupation (working outside home, at least one stay-at-home parent); rounds of SEP (three or four rounds; two rounds); and self-practice (regular, occasional). All the effects were significant at the 5% level. Interaction effects were non-significant $F(3, 3226) = 68.92, p = 0.33$.

Comparison The average post-test SPAI-C score of the treatment group children was significantly lower than the control group's average scores, $t(3226) = -98.34, p = 0.00$, and their own pre-test scores $t(3226) = -123.23, p = 0.00$

Children's Self-Efficacy in Peer Interaction Scale (CSPI)

Control group pre- and post-test Phases The average CSPI score of the control group children was 48.97 ($SD = 2.34$). One-way analyses of variance showed that the effects of gender and living arrangements were significant. Post hoc analysis using the Scheffé post hoc criterion for significance indicated that the average CSPI scores were higher for control group boys vs. girls, $F(1, 3226) = 90.56, p = 0.00$, and for children who lived with both parents vs. those who lived with single parents, $F(1, 3226) = 78.92, p = 0.02$.

Treatment group pre-test The average pre-test CSPI score of the treatment group children was 49.89 ($SD = 2.03$). One-way analyses of variance showed that the effects of gender, class, and living arrangements were significant. Post hoc analysis using the Scheffé post hoc criterion for significance indicated that the average pre-test CSPI scores were higher for treatment group boys vs. girls, $F(1, 3226) = 90.87, p = 0.02$; for upper-middle-class children vs. elite children, $F(1, 3226) = 78.93, p = 0.02$; and for children who lived with both parents vs. those who lived with a single parent, $F(1, 3226) = 98.23, p = 0.03$.

Treatment group post-test The average post-test score of the treatment group children on the CSPI was 66.38 ($SD=3.04$). One-way analyses of variance showed that the effects of country, gender, class, living arrangements, rounds of SEP, and self-practice were significant. Post hoc analysis using the Scheffé post hoc criterion for significance indicated that the average post-test CSPI scores were higher for children from European countries, the United States, the United Kingdom, Canada, and Australia vs. Asian and African countries, $F(14, 3226) = 118.76, p = 0.03$; for boys vs. girls, $F(1, 3226) = 76.23, p = 0.02$; for upper-middle-class children vs. elite-class children, $F(1, 3226) = 79.22, p = 0.03$; for children who lived with both parents vs. with a single parent, $F(1, 3226) = 98.32, p = 0.01$; for treatment group children who did three or four rounds of the SEP vs. the mandatory two rounds, $F(1, 3226) = 96.33, p = 0.01$; and for children who self-practiced regularly vs. those who did so occasionally, $F(1, 3226) = 90.32, p = 0.03$.

The post-test CSPI scores of the treatment group children were further subjected to a MANOVA with six independent variables, i.e., country, gender, class, living arrangements, rounds of SEP, and self-practice. Significant associations were examined further by non-parametric testing (Kruskal-Wallis). All individual associations were significant. The interaction effect between class and rounds of SEP (Roy's largest root = 0.098172, $F(1, 3226) = 119.23, p = 0.03$; living arrangement and rounds of SEP (Roy's largest root = 0.0817291, $F(1, 3226) = 98.23, p = 0.02$; and rounds of SEP and self-practice (Roy's largest root = 0.09182728, $F(1, 3226) = 117.62, p = 0.00$) were significant.

Comparison The average post-test CSPI scores of the treatment group children were higher than the control group children's average CSPI scores, $t(3226) = 108.56, p = 0.00$, and their own pre-test scores, $t(3226) = 116.23, p = 0.00$.

Significant predictors of treatment group children's post-test CSPI scores

The hierarchical multiple regression (Table 1) revealed that at stage one, the domicile country of the treatment group children contributed significantly to the regression model, $F(1, 3222) = 118.76, p < 0.05$ and accounted for 4.1% of the variation in the CSPI scores of the treatment group children. Introducing the variables of class and gender explained an additional 6% of variation in the CSPI scores, and this change in R^2 was significant, $F(2, 3220) = 211.38, p < 0.001$. Adding the variable living arrangements to the regression model explained an additional 41.1% of the variation in the CSPI scores, and this change in R^2 was significant, $F(1, 3219) = 181.27, p < .001$. Adding SEP rounds to the regression model explained an additional 9% of the variation in the CSPI scores, and this change in R^2 was significant, $F(1, 3218) = 211.28, p < .001$. Finally, the addition of self-practice to the regression model explained an additional 14% of the variation in the CSPI scores of the children, and this change in R^2 was also significant, $F(1, 3217) = 298.65, p < 0.001$. When all six of the independent variables were included in stage five of the regression model, the most important predictor of the CSPI scores was self-practice, which uniquely explained 14% of the variation in the post-test scores. Together, the five independent variables accounted for 74.2% of the variance in the CSPI scores of the treatment group children.

Table 1. Summary of hierarchical regression analysis for variables predicting treatment group children's post-test scores on the CSPI scale

Variable	β	T	sr^2	R	R^2	ΔR^2
Step 1				0.24	0.03	0.04
Country	0.28	2.38*	0.03			
Step 2				0.71	0.58	0.06
Country	0.02	0.27	0.03			
Class	-0.57	-3.88***	0.22			
Gender	-0.29	-3.78**	0.01			
Step 3				0.72	0.55	0.41
Country	0.02	0.21	0.00			
Class	-0.41	-2.86***	0.04			
Gender	-0.29	-3.76**	0.02			
Living arrangements	0.41	4.02***	0.02			
Step 4				0.68	0.56	0.09
Country	-0.04	0.32	0.01			
Class	-0.26	-3.03*	0.02			
Gender	-0.08	-1.37	0.01			
Living arrangements	0.29	4.08***	0.03			
SEP rounds	-0.54	-5.89***	0.12			
Step 5				0.69	0.53	0.14
Country	-0.02	0.31	0.00			
Class	-0.26	-2.88*	0.01			
Gender	-0.10	-2.37	0.00			
Living arrangements	0.28	5.01***	0.03			
SEP rounds	-0.52	-5.87***	0.12			
Self-practice	-0.54	-6.72***	0.14			

Note. $N = 3227$; * $p < .05$, ** $p < .01$, *** $p < .001$

Discussion and conclusion

The results prove and substantiate all four of the initial hypotheses. The pre-test scores on the play interaction subscale and the CSPI were lower and the anxiety and social phobia scores were higher. In the control group, boys and upper-middle-class children scored higher on the play interaction scale, and girls and elite children had higher phobia of social interactions and anxiety. In the treatment group at the pre-test phase, the scores of boys, upper-middle-class children and those who lived with both parents scored higher on the play interaction scale. Treatment group girls, elite children, and those who lived with a single parent had higher social phobia and anxiety on the pre-test. In terms of self-efficacy in peer interactions, control group boys and those who lived with both parents scored higher. In the treatment group, boys, upper-middle-class children, and those who lived with both parents scored higher on the pre-test. Thus, the first hypothesis that introverted children experience a deficit in social interaction competence and proclivity and enhanced social anxieties is proved. Results also showed that gender, class, and living arrangements contribute to the differentials.

Post-test and post-SEP scores of the treatment group children were higher on the PIPPS-PI and CSPI and lower on the SPAI-C. This proves the second and third hypotheses. Results further substantiate the fourth hypothesis that sociodemographic and spirituality-related variables, i.e., SEP rounds and self-practice or engagement, would influence the post-test outcome measures, in the following manner.

Boys, upper-middle-class children, Christians, those who lived with both parents, those who did three or four rounds of the SEP, and those who regularly self-practiced scored higher

on the PIPPS-PI post-test than girls, elite children, children belonging to other religions, children who lived with a single parent, children who only did the mandatory two SEP rounds, and children who claimed to occasionally self-practice.

Post-SEP SPAI-C scores were lower for treatment group children from European countries, the United Kingdom, the United States, Canada, and Australia; for children whose parents both worked outside the home; for those who attended three-to four rounds of the SEP; and for those who regularly self-practiced.

Post-SEP CSPI scores were higher for children from European countries, the United States, the United Kingdom, Canada, and Australia; boys; upper-middle-class children; those who lived with both parents; those who attended three or four rounds of the SEP; and those who self-practiced. Further, the structural equation model of the post-test CSPI scores showed that there is a covariance between the following predictor variables: class and living arrangements, SEP rounds and self-practice and class and self-practice. This possibly indicates that the upper-middle class introverted children tended to reside in family environments more conducive to encourage social interaction competence, i.e., with both parents; to voluntarily participate in the SEP; and to self-engage through self-practice. These combined sociodemographic parameters influenced the post-test CSPI scores. The most effective mediators and predictors of post-test CSPI scores were rounds of SEP and self-practice, with self-practice having the most positive impact.

These results highlight some core sociodemographic differentials in post-test outcome measures. First, there were gender differences in children's responses to spiritual intervention and in social and peer interaction proclivity and competence, boys being more responsive, which corroborates the research that says that boys tend to be more comfortable and at ease in social interactions (e.g., Mulder and van Aken 2014). Second, upper-middle-class children were more receptive to the SEP than were their elite-class counterparts, which indicates that elite children's sociocultural environment may define the contours of their sociability, thereby affecting their social skills. Class differences in the personality disposition of children and the related treatment response needs further research. Third, children from affluent nations were more receptive to the SEP than those from Asian and African countries. Geo-local and country-wise differences and the ways in which the component of culture (some cultures valuing sociability and others placing a premium on solitude and individualistic tendencies) affect the personality traits of children and the corresponding treatment response need further investigation. Fourth, children who voluntarily underwent more rounds of the SEP beyond the mandatory two rounds and who regularly self-practiced reported less social phobia and anxiety and better interaction skills post-treatment. This highlights the personal engagement dimension of spirituality (Helgoe 2008) and the prerequisite of ensuring the efficacy of SEP, including customized programs aimed at therapeutic intervention.

The experiment, although robust in design, has the following limitations. There are no qualitative narratives reporting children's experiences of the SEP and their achievements in terms of overcoming phobia and anxieties. The intermediary effects of parental variables as well as cultural differences in treatment response and outcome measures need focused examination. Further, the aspect of time as a developmental variable and the possibility of introverted children's innate maturity, which develops over time and aids in annihilating interaction anxieties and social phobia, needs investigation. Research is also required on intrafamilial differentials and the response of introverted children to the SEP, as well as the compounding effects of siblings' behavior, birth order, and family form and vulnerabilities.

The study has the following practical implications for the field of counseling and psychotherapeutic interventions with introverted children who experience social interaction anxieties. The importance of spiritual education within and outside the curriculum is foregrounded. A SEP package that would be effective for mitigating anxiety symptoms among introverted children would include components related to self, relationality, and relational consciousness; overcoming fears; and unconditional love and happiness. Specifically, for girls, elite children, and children from Asian and African contexts, differential, in-depth, and culturally diverse program components would need to be designed. For introverted girls, the program components might entail a different lens on anxiety and self and disposition. For elite children, their specific environmental and cultural realities may need to be accounted for while decoding the self, as elite communities may posit greater social alienation for children. Further, for introverted participants from Asian and African countries, the program could be modified to include aspects of indigenous spirituality and belief systems.

Compliance with ethical standards The author declares that she has no potential conflict of interest. All procedures performed in studies involving human participants were in accordance with the ethical standards of the national research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards. Informed consent was obtained from the study participants and their parents via signatures on the prescribed form.

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