

## Application of Mental Relaxation Techniques (Mindful Breathing and Guided Imagery) in Managing Separation Anxiety among 7- to 11-Year-Old Primary School Children in Shiraz

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### ABSTRACT

**Purpose:** This study aimed to determine the effectiveness of mental relaxation techniques, including mindful breathing and guided imagery, in managing separation anxiety and its dimensions among 7- to 11-year-old primary school children in Shiraz.

**Methods and Materials:** This applied study employed a quasi-experimental pretest-posttest design with an experimental group and a control group. The statistical population comprised primary school students aged 7–11 years in Shiraz during the 2026 academic year. Participants were recruited through convenience sampling and initially screened using the Separation Anxiety Assessment Scale developed by Eisen and Schaefer (1999). Thirty children who obtained the highest separation anxiety scores and met the eligibility criteria were selected and randomly assigned to an experimental group receiving mental relaxation training (n = 15) or a control group receiving no intervention (n = 15). The research instruments included the child separation anxiety-related disorders questionnaire and a mental relaxation training program based on mindful breathing and guided imagery. Data were analyzed using SPSS version 26 at descriptive and inferential levels. Analysis of covariance was used to compare posttest scores while controlling for pretest differences.

**Findings:** The analysis of covariance indicated that participation in the mental relaxation program significantly reduced fear and physical symptoms, generalized separation anxiety, anxiety related to being alone, and social anxiety among children with separation anxiety compared with the control condition. However, the intervention did not produce a statistically significant reduction in school-phobia-related symptoms. Overall, the inferential findings supported the effectiveness of mindful breathing and guided imagery for most assessed dimensions of childhood separation anxiety.

**Conclusion:** Mental relaxation techniques based on mindful breathing and guided imagery appear to be effective, accessible, and noninvasive strategies for reducing several major manifestations of separation anxiety in primary school children, although additional interventions may be required to address school phobia specifically.

**Keywords:** *Mental relaxation techniques; mindful breathing; guided imagery; separation anxiety; primary school children.*

## 1. Introduction

Childhood is a formative period in which emotional security, self-regulation, social competence, and adaptive responses to environmental demands develop rapidly. Within this developmental process, temporary distress during separation from parents or primary caregivers may be considered a normal response, particularly in early childhood. However, when separation-related fear becomes excessive, persistent, developmentally inappropriate, and disruptive to daily functioning, it may indicate separation anxiety disorder. Separation anxiety can manifest through intense worry about harm befalling attachment figures, reluctance to attend school, refusal to remain alone, somatic complaints, nightmares, crying, clinging behavior, and repeated efforts to avoid situations involving separation. These reactions may interfere with children's academic participation, peer relationships, family functioning, and gradual acquisition of autonomy. Separation anxiety is especially important during middle childhood because children aged 7–11 years are expected to expand their independence, adapt to formal schooling, establish relationships outside the family, and develop increasingly sophisticated cognitive and emotional capacities (DelGiudice, 2018). When anxiety restricts this developmental movement toward autonomy, it may compromise not only immediate adjustment but also subsequent psychological functioning.

Separation anxiety disorder is clinically significant because its onset commonly occurs during childhood, although symptoms may persist or re-emerge later in life. International epidemiological evidence has shown that pediatric-onset and adult-onset separation anxiety represent meaningful forms of psychopathology across different countries and cultural settings, emphasizing that separation anxiety is not merely a transient childhood concern (Silove et al., 2015). The intergenerational dimension of this problem is also noteworthy. Adult separation anxiety has been associated with increased risk of internalizing psychological difficulties among offspring, suggesting that familial emotional patterns, parental anxiety, attachment processes, and modeling of threat responses may contribute to the development or maintenance of anxiety in children (Finsaas & Klein, 2022). Therefore, childhood separation anxiety should be considered within a broader developmental and relational context in which the child's emotional responses are shaped by attachment experiences,

parental regulation, family communication, and environmental demands.

The attachment relationship is central to children's feelings of security during separation. A secure relationship with caregivers provides a psychological base from which children can explore their environment, tolerate temporary absence, and return to caregivers for emotional support. In contrast, difficult or unpredictable separation experiences may undermine school adjustment and intensify feelings of insecurity, distress, and avoidance (Boboccea, 2023). Among primary school children, separation anxiety may become particularly visible when the child must leave home, enter the classroom, remain at school without a caregiver, participate in social or educational activities, or cope with uncertainty regarding reunion. Persistent anxiety in these circumstances may lead to delayed school entry, repeated absences, crying before school, somatic complaints, dependence on parents, and refusal to participate in age-appropriate activities. School refusal and anxiety are closely connected phenomena, and the literature indicates that anxiety-related school avoidance can become a complex problem involving the child, family, school environment, and broader psychosocial conditions (Tekin & Aydin, 2022). Thus, separation anxiety may gradually extend beyond attachment-related distress and contribute to impaired educational engagement and social development.

The educational consequences of separation anxiety are particularly important because anxiety can consume cognitive resources that would otherwise be devoted to attention, working memory, problem solving, and learning. Children who remain preoccupied with the safety or availability of their parents may experience difficulty concentrating on classroom tasks, interacting with peers, or responding confidently to academic challenges. Recent evidence has linked students' separation anxiety to academic achievement while also highlighting the mediating roles of parental reflective capacity and self-awareness, suggesting that both child-level and parent-level psychological processes influence educational outcomes (Mousavi Asl et al., 2025). Separation anxiety may also be related to weaknesses in self-regulation and executive functioning, which are essential for controlling impulses, shifting attention, organizing behavior, and managing emotional reactions in school settings (Celik et al., 2025). Children who have difficulty regulating distress may respond to separation cues with avoidance rather than adaptive coping, thereby reinforcing their belief that separation is dangerous or intolerable.

Emotional arousal plays a major role in the persistence of anxiety. When children encounter a separation-related cue, physiological activation may include rapid breathing, increased heart rate, muscle tension, abdominal discomfort, nausea, dizziness, and a subjective sense of danger. These bodily sensations can become associated with threatening thoughts and memories, making future separation situations more emotionally salient. Research on emotional arousal indicates that heightened affective states can persist over time and influence how discrete experiences are connected in memory (Clewett & McClay, 2025). In children with separation anxiety, this process may cause a distressing school-entry experience, an episode of parental delay, or a frightening physical sensation to become linked with later expectations of danger. As such associations accumulate, children may become increasingly vigilant to separation cues and interpret ordinary events as evidence that something harmful is likely to happen.

The relationship between separation anxiety and somatic or panic-like experiences further demonstrates the importance of addressing physiological arousal. Childhood separation anxiety disorder has been examined in relation to panic disorder and respiratory versus nonrespiratory symptom patterns, indicating that respiratory sensations and fear-related bodily responses may be clinically relevant in anxiety development (do Cabo et al., 2024). Some children may interpret shortness of breath, chest tightness, trembling, or abdominal discomfort as signs that they are unable to cope without their caregivers. These sensations can intensify fear and motivate escape, reassurance seeking, or school avoidance. Consequently, interventions that directly regulate breathing and reduce physiological activation may be particularly suitable for children whose separation anxiety includes panic/somatic symptoms.

The burden of childhood anxiety is not limited to emotional discomfort. Anxiety disorders in children and young people are associated with poorer health-related quality of life, greater use of health and support services, and substantial economic costs for families and service systems (Dona et al., 2025). When untreated, anxiety may affect educational progress, family routines, parental employment, healthcare utilization, and long-term mental health. In Iran, anxiety disorders constitute an important area of child and adolescent mental health, and a systematic review has demonstrated that anxiety problems are prevalent among Iranian children and adolescents (Zarafshan et al., 2015). More recent evidence from the post-COVID-19 period has further drawn attention to psychological strain and

separation anxiety among Iranian children and adolescents, indicating that crises, disrupted routines, health fears, school closures, and changes in family interaction may have intensified vulnerability to separation-related distress (Vossoughi et al., 2024). These findings underline the need for culturally appropriate, accessible, and school-compatible interventions for Iranian children.

The management of separation anxiety commonly involves cognitive-behavioral strategies, gradual exposure, parental guidance, psychoeducation, and skills training. Cognitive-behavioral therapy is considered an evidence-based approach for childhood separation anxiety because it helps children recognize anxious thoughts, develop coping skills, reduce avoidance, and gradually confront feared situations (Pres et al., 2024). Brief, developmentally tailored cognitive-behavioral interventions may also address the specific maintaining mechanisms of childhood separation anxiety, including catastrophic expectations, reassurance seeking, somatic arousal, and avoidance of age-appropriate separation (Schneider et al., 2024). Nevertheless, comprehensive psychotherapy may not always be readily available in school settings because it can require trained clinicians, substantial time, family participation, and multiple individualized sessions. Therefore, brief adjunctive techniques that can be taught safely in groups and practiced independently may offer practical value.

Emotional management is a central component of effective intervention for children with separation anxiety. A review of emotional management strategies has emphasized the role of self-efficacy in helping children understand and regulate their emotional responses rather than viewing anxiety as uncontrollable (Zendedel et al., 2024). From this perspective, children need not only reassurance that separation is safe but also concrete skills that enable them to reduce physical arousal, redirect attention, tolerate uncertainty, and build confidence in their ability to cope. Relaxation methods are relevant because they offer an immediate behavioral response that can replace crying, clinging, avoidance, or repeated reassurance seeking. When a child learns that anxiety can rise and then decrease through deliberate regulation, the perceived threat of separation may become more manageable.

Mindfulness-based practices represent one promising category of emotional regulation strategies. Mindfulness generally involves intentionally directing attention to present-moment experience with an accepting and nonjudgmental attitude. For children, mindfulness is typically taught through brief, concrete, experiential

exercises involving breathing, bodily awareness, sensory attention, movement, and imagery. Child-specific mindfulness interventions have been associated with improvements in psychological well-being and reductions in impulsive behavior in clinical child populations (Ghodrati, 2025). Child-centered mindfulness has also been found to improve executive functioning and reduce emotion-regulation difficulties among children with social anxiety (Zare Nejad et al., 2024). These outcomes are relevant to separation anxiety because improved attentional control and emotional regulation may help children disengage from catastrophic thoughts and respond more flexibly to temporary separation.

Comparative research has likewise indicated that child-centered mindfulness training can reduce internalizing symptoms among primary school students, supporting its applicability to anxiety-related emotional problems (Obalasi et al., 2023). Classroom-oriented mindfulness exercises may be especially useful because they can be presented as simple activities for calmness and concentration rather than as stigmatizing psychiatric treatment (Sayadi, 2024). School-based programs provide an opportunity to reach children in a familiar environment, normalize emotional skills training, and facilitate repeated practice. More broadly, universal school mental health and well-being programs have been investigated as strategies for promoting psychological adjustment across primary and secondary education (Deighton et al., 2025). Although universal programs serve wider student populations, their emphasis on prevention and accessible skill development supports the integration of brief relaxation practices into school-based mental health services.

Evidence from elementary school interventions suggests that mindfulness-based programs can improve children's well-being and mental health when implemented at the classroom or school level (Malboeuf-Hurtubise et al., 2024). Breath-based mindfulness practice may also support cognitive performance. Daily breathing exercises have been shown to improve primary school children's arithmetic performance, suggesting that regulation of attention and arousal can have benefits extending beyond emotional symptoms (Votmer et al., 2023). Neurophysiological research has further demonstrated that mindful breathing and body-scan training are associated with changes in resting-state electroencephalographic dynamics, providing preliminary support for the proposition that mindfulness practice influences attentional and regulatory brain processes (Ng et al., 2021). Although such findings do not

specifically establish efficacy for separation anxiety, they provide a plausible foundation for using mindful breathing to strengthen the regulation of internal states.

Breathing is particularly suitable for anxiety management because it connects voluntary behavior with autonomic functioning. Slow, deliberate breathing can reduce respiratory instability, interrupt rapid shallow breathing, and create a sense of control over physiological arousal. Breath-focused mind-body therapies have therefore received increasing attention as potentially precise interventions for stress and anxiety, although individual differences in response and mechanism remain important considerations (Lavretsky & Feldman, 2021). A systematic review of brief respiratory, embodiment, cognitive, and mindfulness interventions concluded that short practices can reduce state anxiety, supporting their use when time, resources, or attention spans are limited (Chin et al., 2024). For primary school children, mindful breathing can be simplified through counting, imagery, hand movements, or four-stage breathing, making it easier to understand and practice in school and at home.

Breath regulation may also influence the relationship between conscious attention and reflexive physiological mechanisms. Theoretical work concerning reflexive processes and conscious awareness suggests that deliberate attention may interact with automatic bodily systems in ways that shape emotional experience (Jerath & Beveridge, 2024). In practical terms, a child who slows breathing and focuses on inhalation and exhalation may shift from an automatic threat response toward deliberate self-regulation. This process does not necessarily eliminate distress immediately; rather, it gives the child an observable, repeatable action through which anxiety can be tolerated and gradually reduced. Such an approach is valuable for separation anxiety because the child can use breathing before leaving home, at the school entrance, during class, or when intrusive worries about caregivers arise.

Guided imagery is another accessible technique that may complement mindful breathing. Guided imagery involves intentionally creating a detailed mental representation of a calming, safe, or successful experience. By focusing on visual, auditory, tactile, and emotional details, children may temporarily redirect attention away from threatening thoughts and evoke a subjective sense of safety. Mental imagery has been recognized as an influential cognitive process in educational contexts because it can shape attention, motivation, understanding, and effective leadership-related learning processes (Abtahi, 2024). For

anxious children, the purpose of imagery is not simply distraction; it can also be used to rehearse successful separation, imagine parental return, strengthen positive expectations, and create an internal representation of safety that remains available when the caregiver is absent.

Empirical findings support the use of guided imagery with children. Online-delivered guided imagery relaxation has been shown to reduce stress and promote well-being among primary school children, suggesting that the technique can be effective even when delivered through relatively brief and structured formats (Lim et al., 2023). Guided imagery may be particularly helpful when combined with slow breathing because physiological relaxation can make positive imagery more vivid, while imagery can make breathing practice more engaging and developmentally appropriate. Evidence concerning progressive muscle relaxation, deep breathing, and guided imagery indicates that these techniques can promote both psychological and physiological states of relaxation (Toussaint et al., 2021). Therefore, combining mindful breathing and imagery may target multiple components of separation anxiety, including physical tension, catastrophic thinking, attentional fixation on threat, and low coping confidence.

Recent intervention research has begun to integrate relaxation and guided imagery with social-emotional learning for elementary school children. The MindRegulation-SEL randomized controlled trial was designed to evaluate the effects of relaxation and guided imagery on psychological and biophysiological well-being, socioemotional development, cognitive functioning, and academic achievement (Galinha et al., 2025). This integrated perspective is important because separation anxiety does not occur in isolation from broader emotional and academic functioning. A child who learns to identify bodily arousal, label emotions, imagine a safe outcome, and regulate breathing may also improve confidence, classroom participation, and social engagement. In this sense, relaxation techniques can operate as both symptom-management tools and foundational self-regulation skills.

School refusal provides another context in which mind-body practices may be beneficial. An exploratory cluster-randomized trial of mindfulness yoga among school-refusing children reported reductions in physical injury fears and pulse rate, indicating that school-based mind-body interventions may influence both subjective anxiety and physiological arousal (Kawazu et al., 2024). Although mindfulness yoga differs from mindful breathing and guided imagery, the findings support the feasibility of using body-

focused regulation techniques with children who experience severe school-related distress. Because school phobia and separation anxiety can overlap but are not identical, it is important to examine whether relaxation techniques affect different anxiety dimensions equally. Children whose school refusal is driven primarily by academic, social, or environmental fears may require additional interventions beyond relaxation alone.

The broader mindfulness literature also shows increasing interest in structured contemplative practices across educational settings. A systematic review of meditation in higher education has documented growing implementation and interest in meditation-based programs, although developmental adaptation and context remain essential (Haberlin & Bradshaw, 2025). Among adolescents and young adults, mindfulness-based stress reduction has also been systematically reviewed as an intervention for anxiety disorders, with evidence supporting its potential utility while highlighting variation in intervention design and methodological quality (Hue et al., 2025). These findings from older populations should not be transferred uncritically to young children; nevertheless, they reinforce the broader principle that attentional training, present-focused awareness, and nonreactive engagement with internal experiences may reduce anxiety.

It is also necessary to recognize that children differ in how they respond to anxiety and intervention. Experiences of emotional maltreatment, rejection, or exclusion may contribute to distress among individuals with social anxiety symptoms, illustrating how interpersonal experiences shape threat perception and emotional vulnerability (Perry, 2023). Children with separation anxiety may likewise vary in attachment history, family stress, school climate, temperament, and previous experiences of loss or separation. Accordingly, an effective intervention should be concrete, supportive, nonthreatening, and flexible enough to accommodate different developmental capacities. Breathing and imagery techniques meet many of these requirements because they can be introduced gradually, practiced through play, personalized to the child's preferred safe place, and reinforced by parents and teachers.

Despite growing evidence concerning mindfulness, breathing, relaxation, and imagery, several gaps remain. Many studies have focused on general stress, well-being, attention, academic functioning, oppositional behavior, social anxiety, or broad internalizing symptoms rather than separation anxiety specifically. In addition, some interventions combine multiple therapeutic elements,



making it difficult to determine the value of brief mental relaxation techniques as a focused program. Research conducted with Iranian primary school children remains limited, particularly regarding the effects of an eight-session protocol combining mindful breathing, four-stage breathing, safe-place imagery, positive separation imagery, role-playing, and home practice. It is also unclear whether such training has similar effects on panic/somatic symptoms, generalized separation anxiety, anxiety related to being alone, social anxiety, and school phobia. Examining these dimensions separately is important because each may involve different maintaining mechanisms and may respond differently to relaxation-based intervention.

Accordingly, the aim of the present study was to determine the effectiveness of mental relaxation techniques based on mindful breathing and guided imagery in reducing the dimensions of separation anxiety among 7- to 11-year-old primary school children in Shiraz.

## 2. Methods and Materials

### 2.1. Study Design and Participants

This applied study employed a quasi-experimental pretest–posttest design with an experimental group and a control group. The statistical population consisted of primary school students aged 7–11 years who were enrolled in public and private schools in Shiraz, Iran, during the 2026 academic year. Participants were recruited through convenience sampling. Initially, several public and private primary schools located in different districts of Shiraz were selected after the necessary authorization had been obtained from the Shiraz Department of Education and coordination had been established with the school administrators. The objectives, procedures, duration, and requirements of the study were then explained to school personnel, teachers, parents, and eligible children. Students were considered eligible when they were between 7 and 11 years of age, were attending primary school, obtained an above-average score during the initial assessment of separation anxiety, had written parental consent to participate, had no severe psychological disorder, and were not receiving another psychological intervention concurrently. Children with serious psychological or developmental problems that could interfere with participation, those receiving simultaneous psychological or pharmacological treatment specifically for separation anxiety, and those who were unwilling to continue participating were excluded. Following initial screening with the child separation anxiety questionnaire, 30

students who obtained the highest scores and fulfilled the eligibility criteria were selected as the final sample. They were randomly assigned to an experimental group receiving mental relaxation training ( $n = 15$ ) or a control group receiving no intervention during the study period ( $n = 15$ ). The sample size was determined with reference to conventional sample sizes used in quasi-experimental child intervention studies, findings from comparable national and international research, and the practical constraints associated with implementing group-based interventions in school settings. Before the intervention, all participants completed the separation anxiety pretest under similar environmental and administrative conditions. The experimental group then participated in eight training sessions, whereas the control group continued its routine educational activities without receiving a psychological intervention. After the completion of the intervention, both groups completed the posttest simultaneously under conditions comparable to those of the pretest. To maintain ethical fairness, a brief educational session covering the principal relaxation techniques was provided to the control group after all posttest data had been collected. Ethical principles applicable to research involving children were observed throughout the study. Written informed consent was obtained from parents, and the nature of the activities, voluntary participation, and the right to withdraw without adverse consequences were explained to the children in age-appropriate language. Questionnaires were coded anonymously, participants' identities were not recorded in the dataset, and all information was used exclusively for research purposes. The intervention consisted of safe, noninvasive, and age-appropriate activities, and confidentiality was maintained during all stages of data collection and analysis.

### 2.2. Measures

Separation anxiety and its related dimensions were assessed using the Child Separation Anxiety-Related Disorders Questionnaire developed by Birmaher and colleagues in 1999 to evaluate symptoms of childhood anxiety disorders according to the diagnostic criteria of the fourth edition of the Diagnostic and Statistical Manual of Mental Disorders. The instrument was originally developed for children and adolescents aged 6–18 years and included 38 items; three additional items were subsequently added to the social anxiety subscale, resulting in the currently used 41-item version. The questionnaire produces a total anxiety

score and evaluates five symptom dimensions: panic/somatic symptoms, generalized separation anxiety, anxiety related to being alone, social anxiety, and school phobia. The panic/somatic subscale consists of 13 items, the generalized separation anxiety subscale contains nine items, the anxiety related to being alone subscale includes eight items, the social anxiety subscale comprises seven items, and the school phobia subscale contains four items. A total score above 25 suggests the possible presence of an anxiety disorder, whereas a score above 30 provides stronger evidence of clinically relevant anxiety. For the individual subscales, scores of 7 or higher on the panic/somatic dimension, 9 or higher on generalized separation anxiety, 5 or higher on anxiety related to being alone, 8 or higher on social anxiety, and 3 or higher on school phobia indicate elevated symptoms in the corresponding domains. The instrument was originally developed using clinical samples and has demonstrated satisfactory psychometric properties. Previously reported internal consistency coefficients have ranged from .91 to .95 in nonclinical populations and from .86 to .94 in clinical populations. Its test-retest reliability, concurrent validity, and sensitivity to therapeutic change have also been reported as satisfactory. In the present study, the questionnaire demonstrated acceptable internal consistency, with a Cronbach's alpha coefficient of .74. The questionnaire was administered before and immediately after the intervention to measure changes in the total level and specific manifestations of separation anxiety.

### 2.3. Intervention

The mental relaxation intervention was adapted from the child-focused mindfulness and relaxation framework proposed by Semple and Lee and was implemented in eight sessions lasting approximately 45–60 minutes each. The activities were delivered in an age-appropriate, interactive, and gradual manner, and each session included instruction, supervised practice, discussion of the children's experiences, and a home assignment. The first session introduced the concept of mental relaxation and explained how mindful breathing could help children reduce physical and emotional signs of anxiety. Children learned to breathe deeply and slowly while directing attention to inhalation and exhalation and practiced this technique for approximately three to five minutes, followed by a daily five-minute home exercise. The second session focused on four-stage breathing, consisting of inhalation, a brief pause, exhalation, and another pause accompanied by slow counting. The

technique was practiced both individually and in the group, and children were encouraged to describe the sensations and emotions they experienced and to record a brief account of their home practice. The third session introduced calming guided imagery through the construction of a safe mental place, such as a beach, garden, or preferred room. Children practiced imagining this setting while engaging in mindful breathing and were instructed to repeat the exercise at home for five minutes each day. In the fourth session, breathing and imagery were integrated into a complete relaxation exercise. Participants were taught to attend to sensory details within their imagined safe place, including colors, sounds, smells, textures, and bodily sensations, and discussed how the combined technique influenced their anxiety during separation situations. The fifth session concentrated on recognizing cognitive, emotional, and somatic symptoms of separation anxiety and applying breathing and imagery techniques when these symptoms occurred in everyday settings. Role-playing exercises were used to simulate anxiety-provoking separations, and children recorded relevant situations and their use of coping techniques as homework. During the sixth session, children developed positive mental images of temporary separation and parental return and constructed brief mental stories portraying successful and safe separation experiences. These images were combined with controlled breathing to strengthen confidence and reduce catastrophic expectations. The seventh session reviewed all previously taught breathing and imagery techniques, addressed difficulties and questions, and used interactive and play-based exercises to reinforce regular application of the skills in real-life situations. The final session evaluated perceived progress, reviewed changes in anxious feelings and behaviors, and introduced an individualized self-help plan for continued practice. Children were encouraged to use the techniques independently, and the importance of continued parental support and reinforcement was emphasized. The control group received no intervention during the eight-session period.

### 2.4. Data Analysis

The collected data were analyzed using IBM SPSS Statistics version 26. Descriptive statistics, including the mean and standard deviation, were calculated to summarize the pretest and posttest scores of the experimental and control groups for the total separation anxiety score and its five dimensions. Inferential analysis was conducted using

analysis of covariance to determine whether participation in the mental relaxation intervention produced significant posttest differences between the groups after controlling for the corresponding pretest scores. In each analysis, group membership was entered as the independent variable, the posttest score of the relevant separation anxiety dimension was entered as the dependent variable, and its pretest score was treated as the covariate. Before conducting the analysis of covariance, the relevant statistical assumptions were evaluated, including normality of score distributions, homogeneity of variances, linearity between the covariate and dependent variable, homogeneity of regression slopes across the groups, and independence of observations. The inferential analyses examined intervention effects on panic/somatic symptoms, generalized separation anxiety, anxiety related to being alone, social anxiety, and school

phobia. Statistical significance was evaluated at the conventional alpha level of .05.

### 3. Findings and Results

The study included 30 primary school children aged 7–11 years, with 15 participants assigned to the experimental group and 15 to the control group. In each group, eight participants (53.3%) were girls and seven (46.7%) were boys, indicating an identical gender distribution across the two groups. In the experimental group, five children (33.3%) were aged 7–9 years, five (33.3%) were aged 9–10 years, and five (33.3%) were 11 years old. In the control group, six children (40.0%) were aged 7–9 years, five (33.3%) were aged 9–10 years, and four (26.7%) were 11 years old. Thus, the experimental and control groups were generally comparable in terms of gender and age distribution.

**Table 1**

*Means and Standard Deviations of Separation Anxiety Dimensions at Pretest and Posttest in the Experimental and Control Groups*

| Variable                       | Assessment | Experimental Group, M ± SD | Control Group, M ± SD |
|--------------------------------|------------|----------------------------|-----------------------|
| Panic/somatic symptoms         | Pretest    | 14.09 ± 3.56               | 13.68 ± 3.76          |
|                                | Posttest   | 10.65 ± 3.57               | 13.99 ± 2.65          |
| Generalized separation anxiety | Pretest    | 9.22 ± 2.68                | 8.95 ± 3.09           |
|                                | Posttest   | 6.01 ± 3.23                | 9.16 ± 2.37           |
| Anxiety related to being alone | Pretest    | 8.43 ± 2.33                | 6.45 ± 2.57           |
|                                | Posttest   | 8.31 ± 2.57                | 8.31 ± 2.98           |
| Social anxiety                 | Pretest    | 7.23 ± 2.46                | 7.37 ± 2.98           |
|                                | Posttest   | 5.00 ± 2.43                | 7.76 ± 2.57           |
| School phobia                  | Pretest    | 4.12 ± 2.09                | 3.98 ± 2.00           |
|                                | Posttest   | 3.87 ± 2.32                | 4.11 ± 1.98           |

As shown in Table 1, the mean panic/somatic symptom score in the experimental group decreased from 14.09 at pretest to 10.65 at posttest, whereas the corresponding score in the control group increased slightly from 13.68 to 13.99. The mean generalized separation anxiety score also decreased in the experimental group from 9.22 to 6.01, while it increased slightly in the control group from 8.95 to 9.16. For anxiety related to being alone, the experimental group demonstrated only a slight reduction from 8.43 to 8.31, whereas the control group's mean increased from 6.45 to 8.31. The mean social anxiety score decreased from 7.23 to 5.00 in the experimental group but increased from 7.37 to 7.76 in the control group. Finally, the mean school-phobia score showed only a small reduction in the experimental group, from 4.12 to 3.87, while the control group's mean increased slightly from 3.98 to 4.11. Overall, the descriptive findings indicated more pronounced post-intervention reductions in panic/somatic symptoms, generalized

separation anxiety, and social anxiety in the experimental group than in the control group.

Before conducting the analyses of covariance, the relevant statistical assumptions were examined. The normality of the distributions was assessed using the Kolmogorov–Smirnov test, and the nonsignificant results indicated that the distributions of the study variables did not differ significantly from normality. The homogeneity of error variances was evaluated using Levene's test, with nonsignificant results supporting the equality of variances across the experimental and control groups. In addition, the interactions between group membership and the corresponding pretest scores were not statistically significant, confirming the assumption of homogeneity of regression slopes. The relationships between the pretest covariates and posttest dependent variables were also considered sufficiently linear, and observations were independent because each participant contributed data to



only one study group. Accordingly, the principal assumptions required for the analysis of covariance were

satisfied, and adjusted posttest comparisons could be conducted.

**Table 2**

*Analysis of Covariance Comparing Adjusted Posttest Scores of Separation Anxiety Dimensions Between the Experimental and Control Groups*

| Dependent Variable             | Sum of Squares | df | Mean Square | F      | p      |
|--------------------------------|----------------|----|-------------|--------|--------|
| Panic/somatic symptoms         | 679.227        | 1  | 679.227     | 37.889 | < .001 |
| Generalized separation anxiety | 700.442        | 1  | 700.442     | 41.557 | < .001 |
| Anxiety related to being alone | 508.223        | 1  | 508.223     | 31.668 | < .001 |
| Social anxiety                 | 446.662        | 1  | 446.662     | 29.094 | < .001 |
| School phobia                  | 3.116          | 1  | 3.116       | 1.895  | .237   |

As presented in Table 2, after controlling for the corresponding pretest scores, a statistically significant difference was found between the experimental and control groups in posttest panic/somatic symptoms,  $F = 37.889$ ,  $p < .001$ . Considering the lower posttest mean in the experimental group, mental relaxation training significantly reduced panic/somatic symptoms. A significant adjusted difference was also observed in generalized separation anxiety,  $F = 41.557$ ,  $p < .001$ , indicating that mindful breathing and guided imagery reduced generalized separation anxiety. The group effect on anxiety related to being alone was statistically significant,  $F = 31.668$ ,  $p < .001$ , suggesting that the intervention affected this dimension after pretest differences were statistically controlled. Similarly, the adjusted posttest social anxiety scores differed significantly between the groups,  $F = 29.094$ ,  $p < .001$ , with lower scores observed in the experimental group. In contrast, the difference between the experimental and control groups in adjusted posttest school-phobia scores was not statistically significant,  $F = 1.895$ ,  $p = .237$ . Therefore, the mental relaxation intervention was effective in reducing panic/somatic symptoms, generalized separation anxiety, anxiety related to being alone, and social anxiety, but it did not significantly reduce school phobia.

#### 4. Discussion and Conclusion

The present study investigated the effectiveness of mental relaxation techniques based on mindful breathing and guided imagery in reducing the dimensions of separation anxiety among primary school children aged 7–11 years in Shiraz. The findings showed that, after controlling for pretest scores, the intervention significantly reduced panic/somatic symptoms, generalized separation anxiety, anxiety related to being alone, and social anxiety in the experimental group

compared with the control group. However, the intervention did not produce a statistically significant reduction in school phobia. These results generally support the effectiveness of an eight-session, child-centered relaxation program for managing several emotional, cognitive, and physiological manifestations of separation anxiety. The findings also suggest that different components of separation anxiety may not respond equally to a brief relaxation intervention and that school phobia may involve additional mechanisms requiring more targeted therapeutic strategies.

The first finding indicated that mental relaxation training significantly reduced panic/somatic symptoms among children with separation anxiety. This result is consistent with evidence showing that breathing-based, mindfulness-oriented, and guided imagery interventions can decrease physiological arousal and subjective anxiety. Brief respiratory and mindfulness interventions have been found to reduce state anxiety by influencing attention, bodily awareness, and autonomic regulation (Chin et al., 2024). Similarly, deep breathing and guided imagery have been shown to facilitate psychological and physiological relaxation, supporting their use in the management of bodily manifestations of anxiety (Toussaint et al., 2021). Because panic/somatic symptoms may include rapid breathing, chest discomfort, dizziness, trembling, nausea, abdominal pain, and increased heart rate, the deliberate regulation of breathing can provide children with a direct method for modifying the physiological component of their anxiety.

This finding can also be explained through the connection between respiratory activity and autonomic arousal. Children with separation anxiety may interpret ordinary bodily sensations as signs of danger or inability to cope without their parents. Such interpretations can intensify fear and create a cycle in which anxiety increases bodily arousal

and bodily arousal further increases anxiety. Breath-focused mind–body interventions may interrupt this cycle by slowing respiratory rhythm, reducing hyperventilation-like patterns, and increasing the child’s perceived control over internal sensations (Lavretsky & Feldman, 2021). The relationship identified between childhood separation anxiety and respiratory or panic-related symptom patterns further supports the clinical relevance of regulating breathing in this population (do Cabo et al., 2024). Therefore, the significant reduction in panic/somatic symptoms may reflect both a physiological calming effect and a cognitive change in how children interpret and respond to bodily arousal.

The use of mindful attention may have strengthened this effect. Rather than responding automatically to anxiety sensations, the children were taught to observe inhalation and exhalation, count the stages of breathing, and redirect attention to the present moment. This process may have reduced automatic threat reactions and increased the ability to experience bodily sensations without escalating them. Theoretical accounts of the relationship between conscious awareness and reflexive physiological mechanisms suggest that deliberate attentional control can influence automatic bodily and emotional processes (Jerath & Beveridge, 2024). In addition, mindfulness training involving breathing and body awareness has been associated with changes in resting-state neurophysiological activity, indicating that repeated practice may influence mechanisms related to attention and emotional regulation (Ng et al., 2021). In the present study, repeated practice during sessions and at home may therefore have improved the children’s ability to regulate arousal when separation-related fear emerged.

The second finding showed that the intervention significantly reduced generalized separation anxiety. This dimension includes persistent concerns about separation, excessive worry regarding harm to attachment figures, and anticipatory anxiety about being away from parents. The result is consistent with studies indicating that child-centered mindfulness interventions can reduce internalizing symptoms and improve emotional functioning. Child-focused mindfulness has been associated with improved psychological well-being and reduced maladaptive behavioral reactivity in children with psychological difficulties (Ghodrati, 2025). Similarly, child-centered mindfulness training has demonstrated effectiveness in reducing internalizing symptoms among elementary school students (Obalasi et al., 2023). These findings support the proposition that mindfulness-based relaxation can help

children manage repetitive worry and emotional distress associated with separation.

Guided imagery may have been particularly important in reducing generalized separation anxiety. Anxious children often imagine negative outcomes, such as a parent being harmed, failing to return, or being unavailable when needed. The intervention replaced these threatening mental representations with images of safe separation, successful coping, and parental return. By repeatedly imagining a safe place and constructing positive stories of temporary separation, children may have developed more adaptive expectations. Guided imagery relaxation has previously been shown to reduce stress and improve well-being among primary school children (Lim et al., 2023). Furthermore, the role of mental imagery in shaping attention, motivation, and psychological functioning has been emphasized in educational contexts (Abtahi, 2024). In the present study, imagery may have modified the emotional meaning of separation by helping children mentally rehearse nonthreatening outcomes rather than repeatedly anticipating danger.

The reduction in generalized separation anxiety can also be interpreted in terms of increased emotional self-efficacy. Children who perceive anxiety as uncontrollable are likely to seek constant reassurance and avoid separation. In contrast, children who possess a specific coping routine may begin to believe that they can manage anxious thoughts and sensations independently. Emotional management strategies are closely related to the development of self-efficacy among children with separation anxiety (Zendedel et al., 2024). Through repeated practice, the children in the experimental group may have learned that distress can be recognized, tolerated, and reduced without immediate parental presence. This experience may have weakened catastrophic expectations and increased confidence in their ability to cope during temporary separations.

The third finding indicated that mental relaxation techniques significantly affected anxiety related to being alone after pretest differences were controlled. This result is important because fear of being alone often reflects low perceived safety and limited confidence in independent coping. Although the raw descriptive change in the experimental group was relatively small, the covariance analysis indicated a significant adjusted group effect. This pattern may partly reflect the higher pretest mean in the experimental group and the statistical adjustment for baseline differences. Therefore, the finding should be interpreted as evidence that the intervention influenced

adjusted posttest scores rather than as evidence of a large unadjusted decrease.

The significant effect on anxiety related to being alone is nevertheless theoretically plausible. Mindful breathing provides children with an internal coping resource that remains available even when a parent is absent. Guided imagery similarly allows the child to evoke a mental representation of safety without requiring the physical presence of the caregiver. Attachment-based research indicates that children's responses to separation and school adjustment are strongly influenced by the quality of the parent-child relationship and the security associated with the caregiver (Boboccea, 2023). Relaxation training cannot directly alter attachment history, but it may help children internalize a sense of safety and transfer some regulation from the caregiver to the self. The safe-place imagery exercise may have functioned as a symbolic secure base, while breathing exercises may have provided a concrete strategy for managing distress independently.

The effect may also be related to improvements in self-regulation and executive control. Separation anxiety has been associated with self-regulatory and executive-function difficulties in young children (Celik et al., 2025). Children who struggle to shift attention away from threat or inhibit reassurance-seeking behavior may find being alone especially difficult. Mindfulness-based practices can strengthen the capacity to sustain attention, redirect focus, and regulate emotional reactions. Child-centered mindfulness interventions have been reported to improve executive functions and reduce difficulties in emotion regulation among anxious children (Zare Nejad et al., 2024). Daily breath-based mindfulness exercises have also produced cognitive benefits in primary school children, including improved arithmetic performance, which may reflect enhanced attentional control (Votmer et al., 2023). Consequently, the intervention may have reduced anxiety related to being alone by strengthening the cognitive and emotional capacities required for independent coping.

The fourth finding demonstrated a significant reduction in social anxiety following the intervention. Although the treatment was designed primarily for separation anxiety, this effect is understandable because separation-related distress and social anxiety may share several mechanisms, including heightened self-consciousness, avoidance, threat-focused attention, low emotional control, and fear of coping without a familiar attachment figure. Children who depend heavily on parental presence may find social and educational situations more threatening when they must participate

independently. By reducing physiological arousal and increasing self-regulation, the intervention may have improved the children's confidence in interacting with peers and participating in school activities without parental reassurance.

This result aligns with findings showing that mindfulness-based interventions can reduce social anxiety and improve emotion regulation in children (Zare Nejad et al., 2024). It is also consistent with research demonstrating that elementary school mindfulness programs can improve well-being and mental health (Malboeuf-Hurtubise et al., 2024). Experiences of exclusion and emotional adversity have been linked to distress among individuals with social anxiety symptoms, emphasizing that social anxiety is shaped by both internal vulnerability and interpersonal experiences (Perry, 2023). Although the present intervention did not directly address peer rejection or social beliefs, relaxation skills may have reduced the intensity of emotional responses during social encounters. A calmer physiological state may have enabled children to interpret social situations less negatively and remain engaged rather than withdrawing.

The group-based format may also have contributed to the reduction in social anxiety. The sessions included interactive exercises, discussion, role-playing, and shared practice. Such activities may have normalized anxiety, provided opportunities for supportive peer interaction, and reduced feelings of isolation. Classroom mindfulness exercises are often designed to promote calmness and concentration through developmentally appropriate activities (Sayadi, 2024). The use of play-based and experiential techniques in the present intervention may therefore have enhanced both emotional regulation and comfort in group situations. Furthermore, school-based mental health programs can promote well-being by integrating psychological skills into familiar educational environments (Deighton et al., 2025). Delivering the intervention within a school-related context may have helped children generalize relaxation skills to social and classroom situations.

The fifth finding showed that the intervention did not significantly reduce school phobia. This result differs from the significant effects obtained for the other dimensions and indicates that school phobia may be maintained by factors that cannot be sufficiently altered through relaxation alone. School refusal and school-related anxiety are multidimensional phenomena that may arise from separation distress, fear of academic failure, bullying, teacher-related concerns, peer difficulties, learning problems, family reinforcement, or broader environmental stressors (Tekin &

Aydin, 2022). When school phobia is driven by factors such as social humiliation, academic pressure, or negative school experiences, mindful breathing and safe-place imagery may reduce immediate arousal but may not change the external conditions or avoidance patterns responsible for the problem.

The nonsignificant finding can also be understood in relation to the intervention's duration and content. Although the protocol included role-playing and the application of coping strategies to real-life separation situations, it did not appear to include systematic graded exposure to school attendance, direct modification of school-related beliefs, intensive parental training, or coordination with teachers to reduce avoidance reinforcement. Cognitive-behavioral approaches to separation anxiety commonly combine coping skills with exposure, cognitive restructuring, and parental involvement (Pres et al., 2024). Brief treatments tailored to childhood separation anxiety similarly emphasize the need to target specific maintaining factors and gradually confront avoided situations (Schneider et al., 2024). Therefore, relaxation may be helpful as a preparatory or complementary technique, but it may not be sufficient as a stand-alone treatment for entrenched school phobia.

The result should not be interpreted as indicating that mindfulness-based methods have no value for school refusal. An exploratory trial of mindfulness yoga with school-refusing children reported reductions in physical injury fears and pulse rate, demonstrating possible benefits for selected psychological and physiological outcomes (Kawazu et al., 2024). However, improvement in specific fears or arousal does not necessarily result in a broad reduction in school-phobia symptoms. The present finding suggests that school-related avoidance may require a multimodal intervention incorporating relaxation, gradual school exposure, family behavior management, teacher collaboration, and treatment of academic or interpersonal stressors.

Taken together, the findings support the broader literature on relaxation, mindfulness, and imagery interventions for children. A randomized trial integrating relaxation, guided imagery, and social-emotional learning has been designed to examine psychological, biophysiological, cognitive, and academic outcomes among elementary school children, reflecting increasing recognition of the multidimensional value of these techniques (Galinha et al., 2025). Systematic evidence regarding mindfulness-based stress reduction among adolescents and young adults also supports its potential for anxiety management, although intervention

effects vary across age groups and program designs (Hue et al., 2025). The expanding use of meditation in educational institutions further demonstrates growing interest in incorporating contemplative and self-regulatory practices into learning environments (Haberlin & Bradshaw, 2025). The present study extends this body of work by focusing specifically on multiple dimensions of separation anxiety among Iranian primary school children.

The findings also have developmental significance. Middle childhood is characterized by increasing autonomy, expansion of peer relationships, and growing responsibility for school and social functioning (DelGiudice, 2018). Excessive separation anxiety can interfere with these developmental tasks and negatively affect educational achievement. Separation anxiety has been associated with academic functioning, with parental reflective capacity and self-awareness playing mediating roles (Mousavi Asl et al., 2025). By helping children regulate distress independently, the intervention may support not only symptom reduction but also participation in school and age-appropriate autonomy. This is particularly relevant in the Iranian context, where anxiety disorders are prevalent among children and adolescents (Zarafshan et al., 2015), and post-crisis psychological strains have increased concern about separation anxiety (Vossoughi et al., 2024).

The potential preventive value of the intervention should also be considered. Separation anxiety may persist into later life and is recognized across pediatric- and adult-onset forms internationally (Silove et al., 2015). Furthermore, parental separation anxiety may increase offspring vulnerability to internalizing problems (Finsaas & Klein, 2022). Early interventions that teach children to manage physiological arousal and anxious imagery may therefore reduce the likelihood that maladaptive patterns become consolidated. Emotional arousal can persist and bind experiences together in memory, potentially strengthening associations between separation and threat (Clewett & McClay, 2025). Repeated relaxation practice may help create alternative associations in which separation is linked with coping, calmness, and successful reunion.

From a service perspective, the intervention may be valuable because childhood anxiety disorders are associated with reduced quality of life, increased service utilization, and economic burden (Dona et al., 2025). An eight-session school-compatible program based on simple breathing and imagery exercises may be less resource-intensive than individualized psychotherapy and may be delivered by trained school counselors or psychologists. Nevertheless,

such programs should not be viewed as substitutes for comprehensive treatment when children display severe impairment, comorbid disorders, or persistent school refusal. Rather, they may serve as early interventions, adjunctive treatments, or components of broader school mental health programs.

The present study had several limitations. The sample consisted of only 30 children selected through convenience sampling from primary schools in Shiraz, which limits the statistical power and generalizability of the findings to other age groups, geographic regions, cultural settings, and clinical populations. The study used a quasi-experimental pretest–posttest design and did not include an active comparison condition, making it difficult to separate the specific effects of mindful breathing and imagery from nonspecific influences such as attention from the facilitator, group participation, expectancy, and repeated assessment. Outcomes were measured primarily through a questionnaire, and no parent, teacher, behavioral, physiological, or observational measures were used to confirm the changes. The descriptive scores for anxiety related to being alone also showed baseline differences and only limited raw improvement in the experimental group, although the adjusted analysis was significant; therefore, this result should be interpreted cautiously. In addition, the absence of a reported follow-up assessment prevented evaluation of whether the intervention effects were sustained over time. Information regarding adherence to home practice, treatment fidelity, participant attendance, and possible concurrent changes in family or school circumstances was also unavailable.

Future studies should recruit larger and more diverse samples through probability-based or multisite sampling and should include children from different educational, socioeconomic, and cultural backgrounds. Randomized controlled trials with active comparison groups would help distinguish the specific effects of mindful breathing and guided imagery from general therapeutic attention. Researchers should include follow-up assessments at several intervals to determine the durability of treatment effects and should examine whether continued home practice predicts maintenance of improvement. Multiple informants and assessment methods should be used, including parent and teacher reports, behavioral observations, school attendance records, physiological indicators, and child interviews. Future research could compare mindful breathing, guided imagery, and their combined application to identify their separate and additive effects. It would also be useful to

examine mediating mechanisms such as emotional regulation, executive functioning, perceived coping self-efficacy, physiological arousal, and catastrophic imagery. For children with school phobia, future protocols should combine relaxation with graded exposure, cognitive restructuring, parental training, teacher involvement, and interventions targeting peer or academic problems.

School psychologists, counselors, and primary school teachers may use brief, age-appropriate breathing and guided imagery exercises as part of preventive mental health programs and supportive interventions for children displaying separation-related distress. The techniques should be introduced gradually through simple explanations, modeling, games, visual cues, and supervised practice. Parents can be trained to encourage regular practice without using the exercises as another form of excessive reassurance or allowing them to reinforce avoidance. Children should be encouraged to use the skills before school, during transitions, and when bodily signs of anxiety first emerge. Practitioners should monitor each dimension of anxiety separately because improvement in general distress does not necessarily indicate improvement in school phobia. Children with persistent school refusal, severe functional impairment, trauma histories, developmental disorders, or comorbid anxiety and mood symptoms should receive comprehensive assessment and individualized treatment. Collaboration among parents, teachers, counselors, and mental health professionals is especially important when school-related avoidance is maintained by academic, interpersonal, or family factors.

### Authors' Contributions

All authors significantly contributed to this study.

### Declaration

In order to correct and improve the academic writing of our paper, we have used the language model ChatGPT.

### Transparency Statement

Data are available for research purposes upon reasonable request to the corresponding author.

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## Declaration of Interest

The authors report no conflict of interest.

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## Ethical Considerations

In this study, to observe ethical considerations, participants were informed about the goals and importance of the research before the start of the study and participated in the research with informed consent. The study protocol was approved by the relevant institutional research ethics committee under the ethics code IR.IAU.SHIRAZ.REC.1405.010.

## References

- Abtahi, M. a.-S. (2024). Prioritizing the Factors Affecting the Role of Mental Imagery at Allameh Tabataba'i University in Effective Educational Leadership. *Educational Leadership Research*, 8(29), 144-167.
- Boboceca, D. (2023). The Attachment Relationship and Effects of Parent-Child Separation on School Adjustment. *Revista Romaneasca pentru Educatie Multidimensionala*, 15(3), 83-97. <https://doi.org/10.18662/rrem/15.3/755>
- Celik, S. B., Bacanak, E. B., & Bumin, G. (2025). Investigation of the Relationship Between Separation Anxiety and Self-Regulation and Executive Function Skills in Preschool Students. *İnönü Üniversitesi Eğitim Fakültesi Dergisi*, 26(1), 135-153. <https://doi.org/10.17679/inuefd.1525227>
- Chin, P., Gorman, F., Beck, F., Russell, B. R., Stephan, K. E., & Harrison, O. K. (2024). A Systematic Review of Brief Respiratory, Embodiment, Cognitive, and Mindfulness Interventions to Reduce State Anxiety. *Frontiers in psychology*. <https://doi.org/10.3389/fpsyg.2024.1412928>
- Clewett, D., & McClay, M. (2025). Emotional Arousal Lingers in Time to Bind Discrete Episodes in Memory. *Cognition and Emotion*, 39(1), 97-116. <https://doi.org/10.1080/02699931.2023.2295853>
- Deighton, J., Thompson, A., Humphrey, N., Thornton, E., Knowles, C., Patalay, P., & Boehnke, J. R. (2025). Effectiveness of School Mental Health and Wellbeing Promotion: Universal Approaches in English Primary and Secondary Schools.
- DelGiudice, M. (2018). Middle Childhood: An Evolutionary-Developmental Synthesis. In *Handbook of Life Course Health Development* (pp. 95-107). [https://doi.org/10.1007/978-3-319-47143-3\\_5](https://doi.org/10.1007/978-3-319-47143-3_5)
- do Cabo, M. C., da Costa, J. C. A., Nardi, A. E., & Freire, R. C. (2024). Childhood Separation Anxiety Disorder and Panic Disorder: Differences Between Respiratory and Nonrespiratory Subtypes. *The Primary Care Companion for CNS Disorders*, 26(5). <https://doi.org/10.4088/PCC.24m03709>
- Dona, S. W. A., McKenna, K., Ho, T. Q. A., Mudiyansele, S. B., Seymour, M., Le, H. N., & Gold, L. (2025). Health-Related Quality of Life, Service Utilisation and Costs for Anxiety Disorders in Children and Young People: A Systematic Review and Meta-Analysis. *Social Science & Medicine*, 373. <https://doi.org/10.1016/j.socscimed.2025.118023>
- Finsaas, M. C., & Klein, D. N. (2022). Is Adult Separation Anxiety Associated with Offspring Risk for Internalizing Psychiatric Problems? *Psychological medicine*, 53(7), 3168-3177. <https://doi.org/10.1017/S0033291721005249>
- Galinha, I. C., de Carvalho, J. L. D. C. S., de Oliveira, A. C. P., Arriaga, P., Gaspar, A. D., Silva, H. P., & Ortega, V. (2025). MindRegulation-SEL: Randomized Controlled Trial of the Effects of a Relaxation and Guided Imagery Intervention with Socioemotional Learning on the Psychological and Biophysiological Well-Being, Socioemotional Development, Cognitive Function and Academic Achievement of Elementary School Children. *Trials*, 26(1). <https://doi.org/10.1186/s13063-025-08899-3>
- Ghodrati, S. (2025). The Effectiveness of Child-Specific Mindfulness on Improving Psychological Well-Being and Reducing Impulsivity in Children with Oppositional Defiant Disorder. *Research in Child and Adolescent Psychotherapy*.
- Haberlin, S., & Bradshaw, T. (2025). The Integration of Meditation into Higher Education: A Systematic Literature Review. *Journal of American College Health*, 1-13. <https://doi.org/10.1080/07448481.2025.2451974>
- Hue, V. C., Siaw, Y. L., & Nor, A. M. (2025). A Systematic Review of Mindfulness-Based Stress Reduction in the Management of Anxiety Disorders Among Adolescents and Young Adults Aged 13-26. *Asian Journal of Psychiatry*, 108. <https://doi.org/10.1016/j.ajp.2025.104497>
- Jerath, R., & Beveridge, C. (2024). Beyond Awareness: The Binding of Reflexive Mechanisms with the Conscious Mind: A Perspective from Default Space Theory. *Frontiers in human neuroscience*, 18. <https://doi.org/10.3389/fnhum.2024.1520138>
- Kawazu, S., Amitani, M., Suzuki, H., Amitani, H., Monuki, T., Wada, M., Toyohira, S., Hamada, K., Yamamoto, T., Yoshimura, T., Mizuma, K., Nishida, Y., Watanabe, H., Hirose, M., Tagawa, K., Ota, K., Asakawa, A., & Owaki, T. (2024). An Exploratory Cluster-Randomized Controlled Trial on Mindfulness Yoga's Effectiveness in School-Refusing Children: Reductions in SCAS-C Physical Injury Fears and Pulse Rate. *Frontiers in human neuroscience*. <https://doi.org/10.3389/fnhum.2024.1468729>
- Lavretsky, H., & Feldman, J. L. (2021). Precision Medicine for Breath-Focused Mind-Body Therapies for Stress and Anxiety: Are We Ready Yet? *Global Advances in Health and Medicine*, 10. <https://doi.org/10.1177/2164956120986129>
- Lim, C. W., Othman, A., & Hashim, H. A. (2023). The Effect of Online-Delivered Guided Imagery Relaxation on Stress and Well-Being of Primary School Children. *Malaysian Journal of Medical Sciences*, 30(4), 102-115. <https://doi.org/10.21315/mjms2023.30.4.10>
- Malboeuf-Hurtubise, C., Taylor, G., Lambert, D., Paradis, P. O., Leger-Goodes, T., Mageau, G. A., Labbe, G., Smith, J., & Joussemet, M. (2024). Impact of a Mindfulness-Based Intervention on Well-Being and Mental Health of Elementary School Children: Results from a Randomized Cluster Trial. *Scientific reports*, 14. <https://doi.org/10.1038/s41598-024-66915-z>
- Mousavi Asl, S. A., Saffari, M., & Johari, S. F. (2025). Predicting Academic Achievement Based on Students' Separation Anxiety with the Mediating Role of Their Parents' Reflective Capacity and Self-Awareness in Qom. *Scientific Quarterly Journal of Research in School and Virtual Learning*, 13(1), 73-86.

- Ng, H. Y. H., Wu, C. W., Huang, F. Y., Cheng, Y. T., Guu, S. F., Huang, C. M., & Chuang, C. H. (2021). Mindfulness Training Associated with Resting-State Electroencephalograms Dynamics in Novice Practitioners via Mindful Breathing and Body-Scan. *Frontiers in psychology*, 12. <https://doi.org/10.3389/fpsyg.2021.748584>
- Obalasi, A., Khademi, A., Mahmoud Alilou, M., & Etemadinia, M. (2023). Comparison of the Effectiveness of Parent-Child Interaction Therapy (PCIT), Child-Centered Mindfulness Training (Burdick), and Incredible Years Parent Program Training on Reducing Internalizing Symptoms in First-Cycle Elementary Students in Tabriz. *Quarterly Journal of New Psychological Research*, 18(71), 37-50.
- Perry, M. M. (2023). *The Influence of Childhood Emotional Maltreatment and Exclusion on Distress Among Individuals with Social Anxiety Symptoms* [Thesis/dissertation, The University of Mississippi].
- Pres, J. E., Swiatkowska, K., & Kolakowski, A. (2024). Cognitive Behavioral Therapy for the Treatment of Separation Anxiety Disorder in Children: A Research Review and Case Study. *Psychiatria Polska*. <https://doi.org/10.12740/PP/175718>
- Sayadi, K. (2024). Teaching Mindfulness to Children: Exercises for Focus and Calm in the Classroom. National Conference on Educational Sciences and Psychology,
- Schneider, S., Kristen, L., & Krause, K. (2024). Brief Therapy for Childhood Separation Anxiety Disorder. In *Brief CBT and Science-Based Tailoring for Children, Adolescents, and Young Adults* (pp. 151-173). Springer Nature Switzerland. [https://doi.org/10.1007/978-3-031-60746-2\\_9](https://doi.org/10.1007/978-3-031-60746-2_9)
- Silove, D., Alonso, J., Bromet, E., Gruber, M., Sampson, N., Scott, K., Andrade, L., Benjet, C., Caldas de Almeida, J. M., De Girolamo, G., de Jonge, P., Demyttenaere, K., Fiestas, F., Florescu, S., Gureje, O., He, Y., Karam, E., Lepine, J. P., Murphy, S., . . . Kessler, R. C. (2015). Pediatric-Onset and Adult-Onset Separation Anxiety Disorder Across Countries in the World Mental Health Survey. *American Journal of Psychiatry*, 172(7), 647-656. <https://doi.org/10.1176/appi.ajp.2015.14091185>
- Tekin, I., & Aydin, S. (2022). School Refusal and Anxiety Among Children and Adolescents: A Systematic Scoping Review. *New directions for child and adolescent development*, 2022(185-186), 43-65. <https://doi.org/10.1002/cad.20484>
- Toussaint, L., Nguyen, Q. A., Roettger, C., Dixon, K., Offenbaecher, M., Kohls, N., & Sirois, F. (2021). Effectiveness of Progressive Muscle Relaxation, Deep Breathing, and Guided Imagery in Promoting Psychological and Physiological States of Relaxation. *Evidence-Based Complementary and Alternative Medicine*, 2021(1). <https://doi.org/10.1155/2021/5924040>
- Voltmer, K., Hondrich, F., & von Salisch, M. (2023). Daily Breath-Based Mindfulness Exercises in a Randomized Controlled Trial Improve Primary School Children's Performance in Arithmetic. *Scientific reports*, 13(1). <https://doi.org/10.1038/s41598-023-49354-0>
- Vossoughi, M., Kharazi, M., Mani, A., Safari, F., Habibi, P., Zarei, L., Sarikhani, Y., & Heydari, S. T. (2024). Psychological Strains After the Crisis: Evaluating Separation Anxiety Among Iranian Children and Adolescents in the Post-COVID-19 Era. *BMC psychology*. <https://doi.org/10.1186/s40359-024-01945-w>
- Zarafshan, H., Mohammadi, M. R., & Salmanian, M. (2015). Prevalence of Anxiety Disorders Among Children and Adolescents in Iran: A Systematic Review. *Iranian Journal of Psychiatry*, 10(1), 1-7.
- Zare Nejad, S., Soltani Kouhbanani, F. S., Hojjati, S., Ershadi Nejad, A., & Zare Nejad, S. (2024). Determining the Effectiveness of Child-Centered Mindfulness Intervention on Executive Functions and Emotion Regulation Difficulties in Children with Social Anxiety. *Exceptional Children Quarterly*, 24(2), 43-59.
- Zendedel, S., Salim Bahrami, S. H., & Fakhri, M. K. (2024). A Review of Emotional Management Strategy in Self-Efficacy of Children with Separation Anxiety Disorder. *Clinical Excellence*, 14(2), 86-101.