

## REVIEW OPEN ACCESS

# The Effects of Jungian Sandplay Therapy on the Psychological Health of Children and Adolescents: A Systematic Review of Quantitative Studies

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## ABSTRACT

**Introduction:** Sandplay therapy is a globally utilised depth-oriented psychotherapy method that has expanded substantially over the past 15 years, reaching beyond Western contexts into Asia and Latin America. Grounded in a non-verbal and non-directive approach, sandplay is particularly valuable in therapeutic work with children, as well as individuals facing trauma, distress, disabilities and displacement. Although sandplay therapy continues to gain recognition, its research evidence remains less extensive than that of more established therapies.

**Method:** The aim of this systematic review was to compile and critically evaluate the existing empirical evidence on the efficacy of Jungian sandplay therapy in supporting the psychological health of children and adolescents, with a particular focus on trauma-related outcomes. Systematic searches across major databases and additional sources identified 1189 records, of which 27 studies from eight countries met inclusion criteria.

**Results:** Findings provide evidence for the efficacy of sandplay therapy in improving psychological health, including emotional regulation, anxiety reduction and mental health and well-being.

**Conclusion:** Further research using robust designs is recommended to strengthen the evidence base and clarify its effectiveness in trauma-focussed interventions.

## 1 | Introduction

Sandplay therapy is a depth-oriented psychotherapeutic approach in which clients create symbolic scenes in a sandtray using miniature figures, within a 'free and protected space' (Kalff 2003, xiv). Rooted in Jungian analytical psychology (Jung 1966), the key and core principles of sandplay therapy rely upon the *non-directivity of the therapist* and a *primarily non-verbal approach*,

facilitating expression of unconscious material and supporting psychological integration and healing.

Originating from the pioneering work of Dora Kalff (2003) in the 1950s, sandplay offers a safe and non-verbal medium through which clients of all ages can express, explore and transform deep psychological conflicts and developmental challenges. This article examines the therapeutic efficacy

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## Practice and Policy

### Implications for Practice

- Sandplay therapy appears to be an effective method for addressing child and adolescent psychological health.
- The mode of therapy can be used across diverse populations and contexts.
- Sandplay therapy may be useful for those with a history of trauma or those who struggle to verbally articulate their feelings or needs in therapeutic contexts.

### Implications for Policy

- Further, rigorous trials including sandplay therapy are essential to increase our knowledge of its utility and effectiveness.

of sandplay with children and adolescents, highlighting its unique capacity to bridge the conscious and unconscious dimensions of experience within both clinical and developmental contexts.

Jungian sandplay has a rich history, with numerous books exploring its historical, practical and symbolic dimensions (Ammann 1991; Bradway and McCoard 1997; Bradway et al. 2005; Kalff 2003; Mitchell and Friedman 1994, 2021; Turner 2005, 2017; Weinrib 2004). The professional literature on sandplay therapy is particularly abundant in case studies, which highlight the deeply personal and diverse applications of this therapeutic approach across a wide range of life challenges (Freedle 2022).

In Jungian sandplay therapy, children use a tray of natural sand and a selection of miniatures representing elements from fantasy, nature, and everyday life to create symbolic images. This process unfolds within a 'free and protected space' provided by the therapist (Kalff 2003, xiv). Children are encouraged to select objects and figures intuitively, without interruption or interpretation from the therapist, allowing deep unconscious material to emerge naturally. There are no directives; children choose how to use the sand, promoting autonomy, creativity and authentic self-expression.

Having deeply immersed herself in Eastern contemplative traditions—including Taoism, Tibetan Buddhism, and Zen Buddhism—Kalff infused profound spiritual insights into the ethos of sandplay therapy. She emphasised the therapist's non-directive role as one grounded in a stance akin to Zen principles, cultivating a space that evokes the individual's innate capacity for self-healing (Kalff 2003). Within this space, the therapist functions as an attuned witness, observing without interpretation or intrusion, thereby honouring the child's inner process and allowing their internal experiences to unfold without fear of criticism or judgement (Kalff 2003). This witnessing presence embodies deep respect for the child's inherent wisdom and potential for psychological and spiritual growth.

The therapist's consistent presence, acceptance and empathy also serve as emotional containment, ensuring that children feel psychologically and emotionally safe. Kalff conceptualised the therapist as embodying for the child 'the protector, the space, the freedom, and at the same time, the boundaries' (Kalff 2003, 7).

Sessions typically follow a predictable, ritualistic structure (e.g., beginning and ending routines), providing a sense of safety, consistency and comfort. Rituals signal clear boundaries around the experience, further enhancing the sense of protection. Additionally, the sandtray itself creates a clear, defined, safe boundary which symbolises containment. Its size, shape and physical structure are specifically designed to allow children to express themselves within manageable limits (Kalff 2003; Turner 2005). Within this therapeutic space or 'temenos', confidentiality is maintained, reassuring children that their inner world and creations are safe from external exposure.

Sandplay is primarily non-verbal, providing children with a protected environment to express feelings and experiences that may be difficult or impossible to articulate verbally. By moving beyond purely verbal communication or intellectual understanding, this shift appears to open new pathways for engagement, gently softening the child's resistance and inviting more willing participation in the psychotherapeutic process (Freedle et al. 2015; Roesler 2019; Wiersma et al. 2022). The therapist respects this non-verbal process, refraining from immediate interpretation, ensuring the child's symbolic narrative remains personal and unaltered (Kalff 2003).

The sandplay process holds particular relevance for addressing the psychological impact of childhood trauma. It has been suggested that there may be 'unique and possibly heightened effects of sandplay therapy in the treatment of trauma' (Wiersma et al. 2022, 210). The creative multi-sensory experience inherent in sandplay appears to play a critical role in accessing implicit memory and trauma held in non-verbal forms (Badenoch 2007, 2008; Freedle et al. 2020). Through repeated sensory interaction with symbolic imagery drawn from the unconscious, children may gradually become desensitised to distressing emotional experiences. This process enables them to reprocess traumatic memories in a safe, non-verbal way that helps prevent re-traumatisation (Freedle 2017; Freedle et al. 2020; Roesler 2019; Wiersma et al. 2022).

In Jungian terms, trauma can be conceptualised as a psychic imbalance—a disruption of individuation—which compels the psyche to split off parts of the self as a protective response in childhood (Kalsched and Freedle 2019). Kalff observed that creating sandplay images may initiate a transformative movement towards psychological wholeness, echoing Jung's concept of individuation (Jung 1970a, 1970b; Kalff 2003). In this view, sandplay is oriented towards healing, and recovery from trauma is understood as both psychological and spiritual (Stagg 2017).

Although clinical experience and anecdotal evidence underscore sandplay therapy's effectiveness and versatility, historically, its efficacy has not been systematically evaluated in line

with contemporary empirical research standards. There is also inconsistency in terminology, with some literature referring to ‘sandtray therapy’, which often incorporates directives or interpretations to help individuals address specific issues (Wiersma et al. 2022).

However, in recent years, particularly over the past decade, there has been a growing body of quantitative research on sandplay therapy (He et al. 2025). Since 2020, an increasing number of studies have employed randomised controlled trials (RCTs), standardised measurement scales and quantitative methodologies, reflecting a growing commitment to scientific rigour and replicability (He et al. 2025). These empirical studies, grounded in experimental research designs, offer scientific evidence of the effectiveness of sandplay therapy and highlight its role as an evidence-based approach, capable of fostering measurable therapeutic outcomes (Freedle 2022).

Building on previous reviews (He et al. 2025; Hecce et al. 2024; Holliman and Foster 2023; Roesler 2019; Wiersma et al. 2022), this systematic review seeks to examine the impact of Jungian sandplay therapy more specifically *on the psychological health of children and adolescents*, particularly for those with a *history of adverse childhood experiences (ACEs) and trauma* and *using an individual sandplay approach*. The review will examine key questions about the types of studies conducted, their geographical distribution and the therapeutic outcomes for various mental health conditions and trauma-related issues. The aim is to provide a critical evaluation of existing empirical quantitative evidence whilst identifying gaps and offering recommendations for future research to strengthen the foundation of knowledge in this field.

## 2 | Methods

The review was prospectively registered with PROSPERO, the international database of prospectively registered systematic reviews in health and social care (CRD42024522617). The ‘Preferred Reporting Items for Systematic Reviews and Meta-Analyses’ (PRISMA) model, a systematic method designed to improve the reporting of systematic reviews (Page et al. 2021), was utilised.

### 2.1 | Search Procedure

To conduct a systematic search on the effectiveness of sandplay therapy on the psychological health of children and adolescents, the following electronic databases were searched in June 2024: APA PsycNET (including PsycINFO/PsycARTICLES), CINAHL, Cochrane, Discover, ERIC/EBSCO, Google Scholar, PubMed/MEDLINE, ProQuest, Sage Journals, ScienceDirect, Scopus, Semantic Scholar and Web of Science.

Websites and journals of international sandplay organisations were also searched, including the *Journal of Sandplay Therapy* (JST), *Journal of Symbols and Sandplay Therapy* (JSST) and *China Asia on Demand* (CAOD). Direct communication with authors was also made when articles were otherwise unretrievable. Additionally, the reference lists of existing systematic

TABLE 1 | Inclusion and exclusion criteria.

Inclusion criteria	Exclusion criteria
1. Studies which conducted research with an experimental design	1. Studies published before 2000
2. Studies whose primary purpose was to analyse the effects of sandplay on the psychological or mental health of children and adolescents (up to the age of 25 years) measured using relevant tools	2. Studies with unsuitable study designs, such as case studies or those rated as low quality, including those that did not employ a quantitative research design or were purely theoretical in nature, focussing solely on the symbolism of objects in the sand tray, without analysing the effectiveness of sandplay therapy
3. Full-text articles published in peer-reviewed journals in English language	3. Studies conducted in unsuitable settings or applications, such as group sandplay therapy or family sandplay therapy
	4. Studies with unsuitable outcomes, including those describing sandplay as an assessment tool, qualitatively analysing characteristics of sandplay productions or lacking a focus on mental health outcomes.
	5. Studies investigating unsuitable interventions, such as sandplay therapy combined with other distinct psychological therapies (e.g., cognitive behavioural, gestalt or family therapy), online or virtual sandplay therapy or non-Jungian (directive) sandplay therapy
	6. Studies involving unsuitable populations, such as adults over the age of 25
	7. Studies written in languages other than English without available translations
	8. Articles that were inaccessible due to not being freely available online via open access or directly from the original author/s

reviews of sandplay therapy (Herce et al. 2024; Holliman and Foster 2023; Roesler 2019; and Wiersma et al. 2022) were hand-searched to ensure no articles were missed. PICOS search terms can be found in File S1.

Screening was conducted via Covidence software, with all titles and abstracts as well as extracted texts being double-screened and quality assessed. Inclusion and exclusion criteria can be found in Table 1.

## 2.2 | Study Selection

The database searches yielded a total 1149 articles, whereas 40 references were located from other sources. A total of 645 duplicates were identified, leaving 544 abstracts to screen. Following screening of the abstracts, 425 were deemed to be unsuitable and 119 full-text articles were assessed for eligibility. After screening, 27 of the 119 articles were deemed eligible for inclusion, with 92 studies excluded based on study design (e.g., case study), intervention (e.g., non-Jungian sandplay), population (e.g., adults), setting (e.g., group-based sandplay) and outcomes (e.g., studies related to sandtray characteristics, particular themes or symbols or qualitative aspects—not quantitative impact on children's psychological health). The PRISMA flow diagram provides a visual representation of the process of selecting studies for inclusion is provided (Figure 1):

## 2.3 | Data Extraction

Data were extracted in Covidence according to the pre-determined headings, including the basic characteristics of the study (author, publication year, country), study design (control group/within group study design), outcomes measured (focus of research), basic information of the participants (sample size, age), intervention measured (intervention time, intervention duration, intervention frequency) and main outcome indicators (e.g., improved social skills, reduced anxiety, etc.). The full data extraction table can be found in File S2.

## 2.4 | Quality Appraisal

Studies were critically appraised for their methodological quality by two reviewers using the Critical Appraisal Skills Programme Cohort Study Checklist (CASP; 2023). Scores were out of a total of 28, based on a scoring key, but no studies were excluded on the basis of low quality. The full quality assessment table can be found in File S3. Studies excluded based on outcome can be found in File S4.

## 3 | Results

From the 27 articles reviewed, evidence highlighted the positive impact of sandplay therapy on children and adolescents across eight distinct areas of psychological health and categories of social, emotional or mental health need: addiction (e.g., substance misuse/dependency); attachment (e.g., parent-infant attachment/communication, separation anxiety, interpersonal

stress); emotional/behavioural regulation (e.g., managing feelings, aggressive behaviour, executive functioning/attention difficulties); mental health (e.g., anxiety, depression, psychological well-being, obsessive-compulsive behaviours); self-esteem (e.g., self-identity or self-awareness); social skills (e.g., peer relationships); stress (e.g., exam- or study-related stress); and trauma (e.g., complex trauma).

### 3.1 | Addiction

Several studies have investigated the application of sandplay in treating addiction. Freedle et al. (2015) found that adolescents and young adults with co-occurring substance use disorders and trauma reported significantly reduced distress and improved daily functioning following participation in a structured outpatient programme incorporating sandplay therapy. Participants and staff rated sandplay as the most critical and engaging component of the intervention. Freedle et al. (2015) highlight that sandplay therapy, together with art therapy and other sensory-based expressive techniques, is recognised as optimal 'trauma-informed practices' for children and adolescents (Steele and Kuban 2011; Steele and Malchiodi 2012; and Freedle 2012).

In the domain of technology addiction and impulsivity, Jo and Park (2023) observed that sandplay therapy significantly reduced smartphone overdependence, impulsivity and interpersonal difficulties in college students. Significant reductions were observed in cognitive, motor and unplanned impulsiveness. Notably, sandplay therapy appeared particularly effective for motor impulsiveness, helping participants regulate reactive behaviours by promoting emotional stability and self-awareness.

### 3.2 | Attachment Needs

Sandplay therapy has also shown efficacy in addressing attachment-related difficulties in children. Nasab and Alipour (2015) found sandplay significantly reduced separation anxiety in young children, whereas Yoo (2015) demonstrated the impact of sandplay on anxiety reduction and improved parent-child attachment among children of alcoholic fathers. In the latter study, the results showed that sandplay therapy significantly reduced both state and trait anxiety in the experimental group. The experimental group also showed notable enhancements in trust, communication, and reduced feelings of alienation, whereas the control group exhibited no significant changes. Similarly, Chung and Jang (2016) reported significant improvements in parent-child communication among Korean-Chinese children who had experienced early separation from parents, with qualitative findings indicating increased emotional intimacy and confidence in expressing feelings.

### 3.3 | Emotional and Behavioural Regulation

Several studies have explored sandplay therapy's role in emotional and behavioural regulation. Lee and Jang (2013) found that sandplay significantly enhanced emotional clarity and

How Does Jungian Sandplay Therapy Address the Psychological Health of Children?

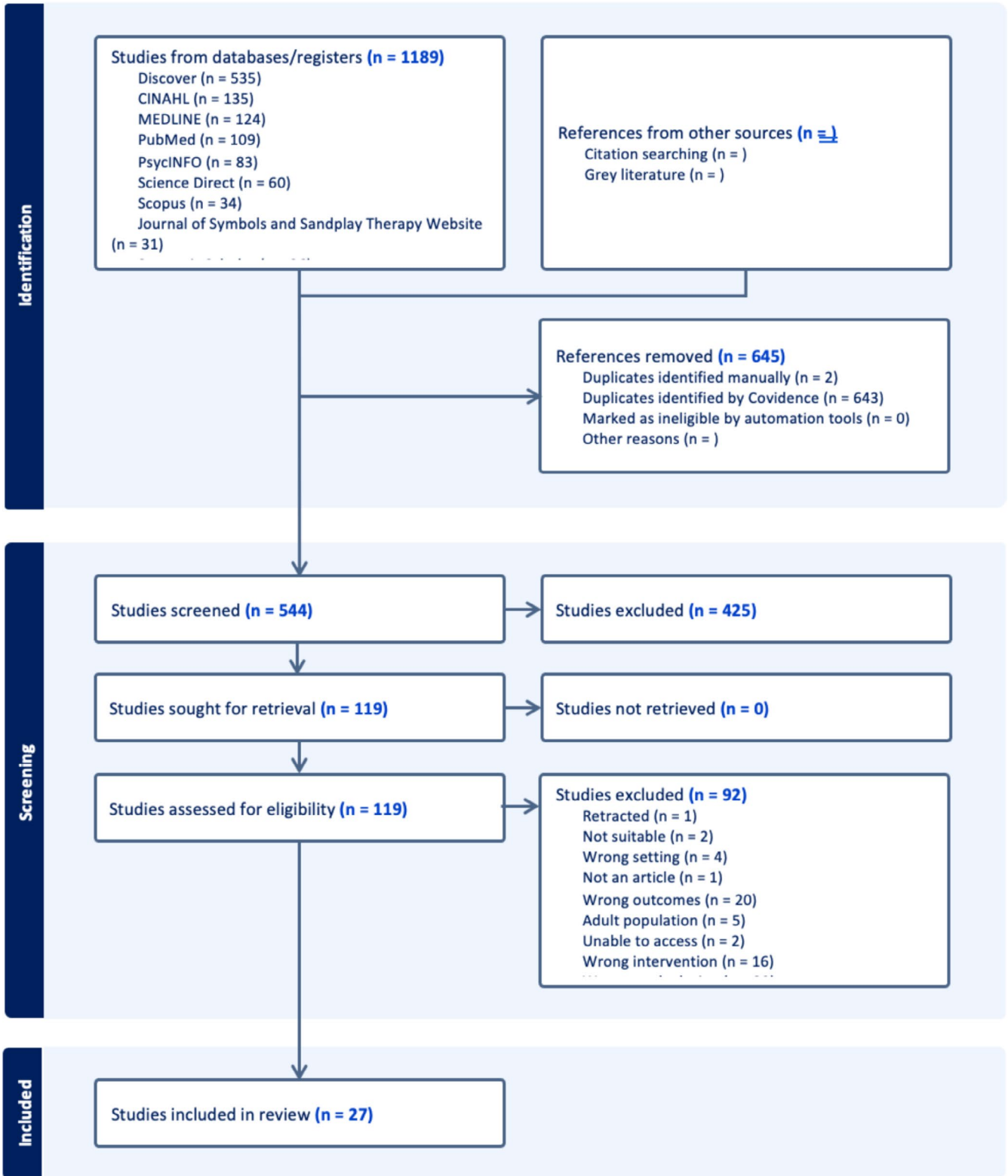


FIGURE 1 | PRISMA flow diagram of study selection.

increased brainwave activity associated with emotional regulation among young women in juvenile facilities. Emotional clarity was measured using the Trait Meta-Mood Scale (TMMS) before and after the intervention, while brainwave activity was

assessed before and after each session to examine changes related to self-regulation; notably, increases in the brainwaves of the left-brain frontal region (Fp1) and the right-brain frontal region (Fp2) were measured simultaneously.

Sim and Jang (2013) reported reduced aggression and improved attention among the same population, highlighting neural benefits alongside behavioural changes. Specifically, the attention index, which is associated with aggression, showed improvement after the therapy sessions. This suggests the therapy not only helped in managing emotional responses but also had a beneficial impact on cognitive function related to attention and focus.

Kwak and Seo (2018) observed significant reductions in aggression and depression among vulnerable children. Similarly, Park and Lee (2020) found elementary school students with school adjustment problems showed improvement in both internalising and externalising behaviours after sandplay therapy. Significant improvements were also noted in total problem behaviours, anxiety/depression, social immaturity and thinking problems. These findings suggest that sandplay therapy is an effective intervention for reducing emotional and behavioural difficulties in students not adapted to school.

Using an RCT design, Tan et al. (2021) found that children with leukaemia or chronic kidney disease experienced significantly improved emotional and behavioural functioning following sandplay therapy. Specifically, results from this RCT indicated fewer emotional and behavioural problems, including anxiety, withdrawal, and social behavioural issues as well as improved emotional stability and lower psychosis scores.

The study was conducted with 60 children aged 6–12 who had chronic diseases (leukaemia or chronic kidney disease) and elevated emotional-behavioural problems. Participants were assigned to either regular care alone or regular care plus sandplay therapy. Outcomes were assessed using four validated measures: the Child Behaviour Checklist (CBCL), the Eysenck Personality Questionnaire (EPQ), the Self-Rating Anxiety Scale (SAS), and the Self-Rating Depression Scale (SDS). Pre- and post-intervention scores were compared using Mann-Whitney tests between groups and Wilcoxon signed-rank tests within groups. Children receiving sandplay therapy showed significantly lower post-treatment CBCL total scores and reductions in anxiety/depression, withdrawal and social behavioural problems compared with controls ( $p < 0.05$ ). They also demonstrated lower EPQ neuroticism and psychoticism scores ( $p < 0.05$ ). Caregivers in the intervention group reported significantly reduced anxiety and depression on the SAS and SDS relative to the control group ( $p < 0.05$ ), with large  $z$ -values (often  $> 4$ ), suggesting moderate to large effects. However, no standardised effect sizes (e.g., Cohen's  $d$ ,  $r$ ) or confidence intervals were calculated or presented anywhere in the paper. Instead, the study relied entirely on non-parametric  $z$ -tests and  $p$ -values to show differences between groups.

Also using an RCT experimental design, Dong et al. (2024) further demonstrated sandplay therapy significantly improved psychological health in hospitalised adolescents. The study found hospitalised adolescents experiencing depression, anxiety, social withdrawal and low self-awareness showed clear improvements in emotional state, social functioning, self-understanding, and psychological adaptation after psychological guidance combined with sandplay therapy, as measured by a custom Likert-scale questionnaire assessing emotional symptoms, social function,

self-awareness, and psychological adaptation. Notably, only about 22% of participants in the experimental group continued to experience low mood, nervousness, or anger after the intervention. In contrast, the control group showed higher scores in these negative emotional states. However, this study did not report effect sizes or confidence intervals, relying only on  $p$ -values to indicate significance. This limits how precisely we can judge the magnitude of the intervention's impact.

### 3.4 | Mental Health and Wellbeing

Regarding mental health and well-being, (von Gontard et al. 2010) large prospective outcome study found significant reductions in internalising and externalising symptoms in children and adolescents receiving sandplay therapy over a year. Improvements were observed across a range of emotional and behavioural domains, supporting sandplay's value in general child mental health treatment.

In the field of neurodevelopmental disorders, Guo and Li (2021) demonstrated sandplay therapy significantly improved subjective well-being in children with autism, using an RCT study design. The study found children with autism—who exhibited language delays, social-communication difficulties, sensory issues, repetitive behaviours, conduct problems, anxiety, hyperactivity, and low subjective well-being—showed significant improvements across autism symptoms (ATEC), aberrant behaviours (ABC), emotional and behavioural problems (PSQ), and life satisfaction and affect (SWLS and PANAS-C) after 12 weeks of image-sandplay therapy, although no effect sizes or confidence intervals were reported to quantify the magnitude of these improvements.

Li et al. (2022) also used an RCT study design with children with child-onset systemic lupus erythematosus (cSLE) who commonly experienced depression, anxiety, social avoidance, fear, and emotional distress. This group showed significant reductions in depressive symptoms (CDI-S); lower anxiety across multiple domains (SCARED); improved social, emotional and school functioning (PedsQL 4.0); and better clinical disease activity markers (SLEDAI, C3, C4, dsDNA) after receiving sandplay therapy alongside medication; however, the study did not report any effect sizes or confidence intervals.

Among university students with visual impairments, Park and Lee (2013) reported significant reductions in anxiety and depression and enhanced psychological well-being, with participants showing significantly increased autonomy, personal growth, self-acceptance and better quality of interpersonal relationships. Similarly, Maeng and Jang (2014) found blind students experienced significantly increased self-esteem, reduced anxiety and improved sociability after engaging in sandplay therapy.

In the context of university student mental health, Lee and Yoon (2012) found sandplay therapy significantly improved psychological well-being, emotional acceptance and positive thinking compared to a structured self-exploration programme. The sandplay therapy participants also demonstrated higher levels of positive emotional experiences and an improved ability to accept negative thoughts and situations rather than avoid them.

A study by Foo and Freedle (2024) on adult women with generalised anxiety disorder (GAD) found sandplay therapy not only significantly reduced anxiety symptoms but also improved metabolic brain function in regions associated with emotional regulation, including the hippocampus and prefrontal cortex, as measured using proton magnetic resonance spectroscopy (MRS). This study is significant in supporting our understanding of how sandplay therapy treats anxiety because it offers a quantifiable measure of neuronal health and metabolic function in key brain areas implicated in anxiety disorders. Improvements in the metabolic brain function following therapy suggest enhanced neuronal integrity and better regulation of anxiety-related brain circuits. The authors suggest Jungian sandplay therapy is not only culturally sensitive, but also a neurobiologically informed intervention (Foo and Freedle 2024).

The treatment of obsessive-compulsive behaviours has also benefited from sandplay interventions. Matta and Ramos (2020) documented full symptom remission in three Brazilian children diagnosed with OCD following a series of sandplay sessions, supported by corroborating reports from parents and teachers.

### 3.5 | Self-Esteem

In relation to self-esteem, Yang (2014) demonstrated that children in grandparent-led households showed enhanced self-esteem, emotional intelligence and reduced behavioural problems following sandplay therapy. Results showed significantly reduced internalised behaviours, such as anxiety and depression, and externalised behaviours, including aggression and violence. Improvements were also observed in attention deficits, social immaturity, and cognitive issues. The experimental group showed marked progress in all behavioural domains and also showed substantial improvements in general, social, family, and academic self-esteem following sandplay therapy. Furthermore, sandplay therapy enhanced the children's emotional intelligence, particularly in emotional awareness, expression, thought promotion and emotional control.

Similarly, Na and Jang (2017) found that sandplay therapy helped children of alcoholics (CoAs) reduce internalised shame and significantly improve self-expression, highlighting its capacity to address deep-seated emotional issues associated with chronically low self-esteem. Yahaya et al. (2018) confirmed these findings in a Brunei-based study, showing significant improvements in adolescent self-esteem within a school setting after just four sandplay sessions.

### 3.6 | Social Skills

Sandplay therapy has also been shown to enhance relational and social skills. Jung (2011) found children from low-income backgrounds exhibited significant improvements in social skills and peer relationships following sandplay therapy. Following 12 weekly sandplay therapy sessions, children in the experimental group demonstrated significant improvements across all sub-dimensions of social skills, including cooperation, assertiveness, and self-control.

### 3.7 | Stress

In terms of stress, two studies by Lee and Jang (2012) and No and Kim (2013) demonstrated sandplay therapy significantly reduced depression, anxiety, interpersonal stress, and salivary cortisol levels among students with ADHD tendencies, suggesting both psychological and physiological benefits. These studies are particularly noteworthy as they move beyond reliance on self-reported measures to demonstrate the neurophysiological effects of sandplay therapy. By showing reductions in salivary cortisol, the research highlights the tangible, biological impact of the intervention on stress.

An additional study by Song (2019) showed Korean-Chinese children receiving sandplay therapy experienced significantly decreased academic stress and increased academic self-efficacy. This research highlights the positive impact of sandplay therapy on academic functioning and emotional resilience.

### 3.8 | Trauma

Freedle et al. (2020) demonstrated adding sandplay therapy to an Outdoor Behavioural Healthcare (OBH) programme for emerging adults resulted in significantly greater reductions in psychological distress compared to OBH alone, particularly among those with severe trauma histories. Many of the clients presented with co-occurring trauma and addiction and had experienced multiple treatment failures prior to their admission into the OBH programme.

Although OBH alone and sandplay-added groups demonstrated very large effect sizes and clinical significance, the differences between the groups became more pronounced at higher levels of distress. Those in the 'severely distressed' category within the sandplay-added group reported the greatest improvements, entering treatment with the highest total scores and discharging with scores well below the clinical threshold.

## 4 | Discussion

This systematic review synthesises quantitative research on sandplay therapy across diverse countries, populations and clinical presentations.

There were 27 studies included in the final review. These employed various research designs, reflecting a diverse methodological approach to examining the effects of sandplay therapy. Of these, four studies (all from China) utilised randomised controlled trials (RCTs), providing stronger evidence of the intervention's impact (Dong et al. 2024; Guo and Li 2021; Li et al. 2022; and Tan et al. 2021).

Additionally, 14 studies used a control group design, comparing experimental and control groups to assess outcomes (Chung and Jang 2016; Freedle et al. 2020; Jo and Park 2023; Jung 2011; Kwak and Seo 2018; Lee and Jang 2013; Maeng and Jang 2014; Na and Jang 2017; Nasab and Alipour 2015; Sim and Jang 2013;

Song 2019; Yahaya et al. 2018; Yang 2014; Yoo 2015). Eight studies employed within-group designs, measuring changes within the same participants over time (Foo and Freedle 2024; Freedle et al. 2015; Lee and Jang 2012; Matta and Ramos 2020; No and Kim 2013; Park and Lee 2013, 2020; von Gontard et al. 2010). Finally, one study, conducted by Lee and Yoon (2012), used a comparison group design to evaluate the psychological well-being of participants, but did not explicitly describe the use of a control.

Participants ranged in age from 5 to 24 years, and presented with a variety of psychological, emotional and behavioural challenges (such as ADHD, anxiety, depression, obsessive-compulsive traits, substance misuse, smartphone overdependence), including those related to adverse childhood experiences (ACES) and/or trauma, such as parental rejection or loss, or an alcoholic parent.

Evidence highlighted the positive impact of sandplay therapy on children and adolescents across eight distinct areas of psychological health: addiction (Freedle et al. 2015; Jo and Park 2023); attachment needs (Chung and Jang 2016; Nasab and Alipour 2015; Yoo 2015); emotional/behavioural regulation (Dong et al. 2024; Kwak and Seo 2018; Lee and Jang 2012; Park and Lee 2020; Sim and Jang 2013; and Tan et al. 2021); mental health (Foo and Freedle 2024; Guo and Li 2021; Lee and Yoon 2012; Li et al. 2022; Maeng and Jang 2014; Matta and Ramos 2020; Park and Lee 2013; and von Gontard et al. 2010); self-esteem (Yang 2014; and Yahaya et al. 2018); shame (Na and Jang 2017); social skills (Jung 2011); stress (Lee and Jang 2013; No and Kim 2013; Song 2019); and trauma including complex trauma (Freedle et al. 2020).

Sample sizes varied significantly, from 3 to 163 participants. Intervention length also varied widely, with the number of sessions ranging from 3 to 30 and session lengths lasting between 40 and 90 min. Most sessions occurred weekly or bi-weekly, although some studies did not specify session lengths, frequency, or duration.

The majority of studies originated from South Korea, with additional research contributions from China, the United States, Brazil, Indonesia, Brunei, Germany, and Iran; reflecting a broad global interest in sandplay therapy. Although the exact reasons for the heightened attention from Eastern researchers are unclear, one hypothesis is that it may be connected to sandplay's roots in Eastern philosophical traditions.

With respect to whether sandplay therapy influences the psychological health of children and adolescents, the reported outcomes consistently indicated positive effects of sandplay therapy across multiple domains. In terms of whether sandplay therapy improves the psychological well-being of children and adolescents, statistically significant reductions in psychological distress and increased psychological well-being were commonly observed. Significant improvements in self-esteem, emotional intelligence, social skills and communication were also documented.

Several studies showed particularly sound methodological rigour related to their recruitment of participants, use of

exposure or outcome measures to minimise bias and the precision of results achieved; for example, using tests for strength of association between intervention and outcome or confidence intervals. Studies with high quality appraisal scores (71% or higher) were strong in focussing on a clear research question, robust cohort recruitment, accurate measurements and follow-up (Freedle et al. 2020; Nasab and Alipour 2015; Tan et al. 2021; von Gontard et al. 2010; Yahaya et al. 2018; Foo and Freedle 2024; and Guo and Li 2021).

Three RCTs (Dong et al. 2024; Guo and Li 2021; Li et al. 2022) demonstrated sandplay-based interventions significantly improved emotional, behavioural and quality-of-life outcomes (all  $p < 0.05$ )—measured through tools such as CDI-S, SCARED, PedsQL, ATEC, ABC, PSQ and custom mental-health scales—and in cSLE also reduced disease activity, although none of the studies reported effect sizes or confidence intervals.

One further RCT study by Tan et al. (2021), demonstrated a robust methodological design and showed a positive impact on the children in the study. This study provides promising preliminary evidence, but the absence of effect sizes, confidence intervals and longer-term follow-up means that it is not robust enough to draw strong clinical conclusions and is best viewed as an encouraging pilot-level RCT rather than definitive evidence.

Two studies focussing on Jungian sandplay as taught by Dora Kalff, although not RCTs, did utilise control groups (Freedle et al. 2020; Jo and Park 2023), with one introducing sandplay therapy as a novel therapeutic intervention for addressing smartphone overdependence in adolescents (Jo and Park 2023). The research conducted by Freedle et al. (2020) is particularly noteworthy within this review, not only for its strong methodological rigour (the strongest of all 27 studies), but also due to its explicit focus on improving the psychological health of young adults experiencing co-occurring trauma using a Jungian sandplay method.

Notably, several studies used neurophysiological markers to examine sandplay's efficacy, such as proton magnetic resonance spectroscopy (MRS) to measure anxiety (Foo and Freedle 2024), brainwave activity (EEG) related to emotional regulation and self-control (Lee and Jang 2013; Sim and Jang 2013) and saliva cortisol sampling for stress (Lee and Jang 2012; No and Kim 2013). This mix of designs underscores the growing interest in and applicability of sandplay therapy across different contexts while highlighting the variability in methodological approaches used to investigate its effects.

Although the prevalence of trauma among participants was notable—consistent with previous findings by systematic reviews (Wiersma et al. 2022)—relatively few sandplay studies included in this review explicitly identified trauma as a primary focus of investigation. As a result, the review's ability to evaluate the specific effects of sandplay therapy on trauma-related outcomes was limited.

Furthermore, it was noted several studies focussed on treating symptoms of psychological distress (anxiety, depression, substance misuse) without acknowledging the potential underlying

trauma which may be contributing to these symptoms—an oversight that is often seen in psychiatric practice, where the prioritisation of medical diagnoses and symptom management can obscure research into the underlying mental distress rooted in adverse life experiences (Bentall 2009).

Although the Jungian and Kalfjian roots of sandplay therapy were described in several studies, the use of a Jungian sandplay therapy method was often not explicitly mentioned in the methods and limited information was provided on session delivery or practitioner qualifications. A sub-set of studies identified their use of Kalfjian/Jungian methods (Foo and Freedle 2024; Freedle et al. 2015, 2020; Jo and Park 2023), however, some studies only implicitly referred to the use of non-directive sandplay therapy or Jungian methods (Guo and Li 2021; Kwak and Seo 2018; No and Kim 2013; Park and Lee 2013) or noted Lowenfeld-inspired methods (Tan et al. 2021). In other cases, the therapeutic method was not detailed at all, raising questions about standardisation of interventions across studies, which is a confounding factor.

The inconsistent use of therapeutic frameworks suggests a need for more standardised protocols in future research. For example, it was observed that only one study using an RCT design explicitly referenced a therapeutic framework (Tan et al. 2021), although this therapeutic method (Lowenfeld) is not theoretically rooted in Jungian analytical psychology.

Although many studies reported significant positive outcomes, a reliance on small sample sizes and non-randomised designs in some cases limited the generalisability of findings. The absence of blinding was also a common limitation in studies involving subjective assessments. Methodologically weaker studies, that is, scoring below 50% in the quality appraisal such as the study by Chung and Jang (2016) and Lee and Jang (2012), struggled with rigour, including incomplete follow-up and unclear confounding factors. The variability in study designs, methodologies, and reporting highlights several gaps in the evidence base.

However, given the current lacuna in the field with respect to synthesising evidence for sandplay therapy, the more lenient approach to include all those of the 27 eligible irrespective of detailed information about session length, frequency, therapist qualifications and outcome measures was deemed most appropriate to provide a comprehensive overview. Furthermore, no studies were excluded from this paper due to low methodological quality.

## 5 | Strengths, Limitations, and Future Directions

The findings of this review provide strong evidence for the flexibility and effectiveness of sandplay therapy in promoting the psychological health of children and adolescents. In line with previous systematic reviews (Herce et al. 2024; Holliman and Foster 2023; Roesler 2019; Wiersma et al. 2022), evidence indicates the broad applicability of sandplay as a therapeutic method across developmental stages, diagnostic categories and cultural contexts, with notable effectiveness in supporting those with trauma histories (Freedle et al. 2020).

Overall, this review adds to the growing body of research demonstrating sandplay therapy's significant positive impact on trauma recovery, emotional regulation and social adaptation (He et al. 2025), while also focussing more specifically on the psychological health of children and adolescents with adverse childhood experiences using individual Jungian sandplay therapy methods.

Nevertheless, several important limitations should be acknowledged.

First, although the breadth of research emerging from Eastern contexts was warmly welcomed, the international scope and diversity of study populations may have introduced inconsistencies due to cross-cultural differences in research design and reporting practices. Potential challenges in translation and interpretation of texts may also have led to unintentional errors or misrepresentations. Moreover, it is important to recognise that cultural factors may influence both the implementation and perceived effectiveness of sandplay therapy, and more work must be undertaken to understand these cultural nuances.

Second, despite extensive efforts to obtain relevant full texts via databases, institutional access, and direct contact with authors, some studies—particularly non-open-access publications—were excluded due to inaccessibility. This limitation may have affected the representativeness of the review and introduced potential inclusion bias.

Third, the review included only publications in English. The exclusion of studies in other languages—such as German, Chinese, Japanese, or Korean—may have resulted in the omission of culturally significant research and limited the diversity of global perspectives represented.

Finally, we note that a meta-analysis would have been preferable for interpreting the effectiveness of sandplay for children and adolescents; however, due to the heterogeneity of the studies, this was not rendered possible.

Further research is needed to enhance the evidence base for sandplay therapy, particularly regarding its effectiveness in trauma-related interventions.

Areas for Jungian sandplay studies to improve on relate to:

Firstly, increasing homogeneity in order to reduce variability and improve clarity. For example, identifying confounding factors and taking these into account in the study design or analysis—including the consistent use and reporting of a Jungian sandplay therapeutic framework for intervention and a focus on specific populations, such as children and adolescents with traumatic backgrounds.

Secondly, developing a focus on long-term outcomes so as to explore whether the therapeutic effects of sandplay are sustained or increase after treatment ends. For example, reporting of the length of sandplay therapy exposure and the length of follow-up of subjects.

Thirdly, improving standardisation of methodology to generalise findings with enough assurance in order that results may

be applied to other populations, and implications for practice can be recommended. For example, by using larger sample sizes and through consistent use of more robust research designs and rigorous quality assessments such as randomisation and blinding.

Finally, supporting the dissemination of research through open access policies to ensure the equitable growth, credibility and integration of sandplay therapy within broader mental health practice.

## 6 | Conclusions

This review aimed to evaluate the effect of sandplay therapy as a method for addressing child and adolescent psychological health, particularly those who have adverse childhood experiences (ACEs) and/or trauma. Across diverse populations and treatment contexts, sandplay has been shown to reduce psychological distress, promote emotional regulation and support mental health and wellbeing. The addition of sandplay therapy may offer significant benefits, particularly for clients with a history of trauma, or those who have struggled to articulate their feelings and needs verbally. This review therefore offers valuable insights into the efficacy of sandplay as a therapeutic method for children and adolescents.

In conclusion, further rigorous, open-access, quantitative research is essential to advance understanding of the effectiveness of sandplay therapy, particularly when complemented by high-quality qualitative studies that explore the mechanisms underlying its therapeutic impact.

Specifically, the development of Jungian sandplay therapy would benefit from larger, methodologically robust randomised controlled trials (RCTs), with extended follow-up periods and comprehensive reporting practices. Such research would strengthen the evidence-base and enhance the credibility of sandplay, especially in the context of trauma-related interventions.

At the same time, an over-reliance on quantitative metrics risks overlooking the rich, experiential dimensions of the sandplay process, which are central to its transformative potential. This review lays a foundation for future mixed methods research that captures the complex dynamics of sandplay therapy and its broader clinical applications.

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### Ethics Statement

The authors have nothing to report.

### Consent

The authors have nothing to report.

### Conflicts of Interest

The authors declare no conflicts of interest.

### Data Availability Statement

The data that supports the findings of this study are available in the [Supporting Information](#) of this article.

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### Supporting Information

Additional supporting information can be found online in the Supporting Information section. **File S1:** PICOS search strategy. **File S2:** Data extraction. **File S3:** Quality appraisal. **File S4:** Studies excluded due to outcomes.