Transference interpretation and psychotherapy outcome: a systematic review of a no-consensus relationship

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ABSTRACT

Despite its well-established importance in psychoanalytic theory, there is a scarcity of empirical evidence on the relationship between a therapist's transference interpretation (TI) and therapeutic outcome. The current scientific literature shows no consensus on the existence and nature of such an association. Therefore, the present study aimed to systematically review the literature on the link between TI and outcomes in psychodynamic psychotherapies. The American Psychological Association PsycInfo, MEDLINE, and the Web of Science Core Collection were selected as the primary databases for the literature search. Studies were included if they measured the frequency/concentration of TI in psychodynamic psychotherapy [*e.g.*, transference focused psychotherapy (TFP), supportive-expressive therapy] or compared a treatment group (*e.g.*, high in TI and TFP) with a control group (*e.g.*, low in TI supportive therapy) in an adult population with psychiatric symptoms. Out of 825 retrieved abstracts, 25 articles (21 studies) were included in the final synthesis. 13 out of 21 (62%) studies showed a significant improvement in at least one therapy outcome measure following the use of TI. The present systematic review also revealed high heterogeneity across studies in terms of TI measurement, outcome assessment (*e.g.*, psychiatric symptoms, dynamic change, interpersonal functioning, therapeutic alliance), study design (*e.g.*, experimental, quasi-experimental, naturalistic), patient population (*e.g.*, anxiety disorders, personality disorders), and types of treatment (*e.g.*, TFP, supportive-expressive therapy), preventing researchers from asserting solid conclusions. The results strongly highlight the urgent need for high-quality research to understand which types of patients, how, and when TIs could be effective throughout the therapy process.

Key words: transference, interpretation, psychodynamic psychotherapy, outcome.

Introduction

As one of the most frequently applied and empirically supported psychotherapies, psychodynamic psychotherapy has been shown to be an effective treatment for various psychopathologies and personality disorders (Leichsenring & Rabung, 2011; Shedler, 2010; Steinert *et al.*, 2017). Psychodynamic psychotherapy comprises several essential techniques, including transference interpretation (TI), which has been regarded as a fundamental mechanism that brings about a change in patients' psychological functioning (Cooper, 1987; Freud, 1912; Gabbard, 2004; Hobson & Kapur, 2005; Leichsenring *et al.*, 2006).

Freud was the first clinician who described transference as "new editions or facsimiles of the impulses and phantasies which are aroused and made conscious during the progress of the analysis; but they have this peculiarity, which is characteristic for their species, that they replace some earlier person by the person of the physician. To put it another way: a whole series of psychological experiences are revived, not as belonging to the past, but as applying to the person of the physician at the present moment" (Freud, 1905, p. 116). Despite the lack of consensus on the current definition of transference within the psychoanalytic and psychodynamic fields, transference, in its most general form, refers to the unconscious repetition and projection of patterns of impulses, feelings, thoughts, and behaviors toward the therapist that were continuously experienced during the interaction with significant early others (Hobson & Kapur, 2005; Levy & Scala, 2012).

Based on the assumption that pervasive enactment of past relational dynamics within the therapeutic relationship could provide access to the unconscious, Freud and the psychoanalysts who followed him stressed the importance of the analysis and working through of transference for the success of a psychoanalytic treatment (Freud, 1912; Klein, 1952; Langs, 1973; Zetzel, 1956). Freud (1917), following his acceptance of transference as a key element of analysis rather than an obstacle, argued that transference should not be interpreted before it becomes a resistance in the treatment process. According to Strachey (1934), "mutative interpretation" should make patients aware that the fantasy object (*e.g.*, projected and distorted perception of the therapist based on prior representations) and the real analyst (*e.g.*, the therapist with their actual behavior and attitude) differ from each other.

In later years, Winnicott (1949) highlighted the necessity of the therapists' recognition of their countertransference, including negative feelings such as hate, as it is of utmost importance to capture and interpret both positive and negative transference rather than defending themselves against their negative feelings by denial or reaction formation (*e.g.*, flexing the analytic frame). On the other hand, Klein (1952) pointed out that transference could be observed in all therapeutic material ("total situations") brought by patients, including everyday life narratives, conscious associations, or unconscious projections, from which therapists can extract information on how patients act out in transference. Klein also favored the use of early TIs by targeting primitive unconscious fantasies and the split part-objects internalized in early years, which are then projected onto the analyst, as she purported that transference starts to be formed from the very first moment of the encounter with the therapist. On the contrary, Kohut (1971) was opposed to early TIs as they could hamper the full development of self-object transferences. Kohut (1984) further argued that TI must be a two-step process comprising an empathic understanding of inner dynamics and their genetic interpretations.

Contemporary psychoanalysis and psychoanalytic therapies continue to hold the centrality of transference and TI (Banon *et al*., 2013; Gabbard, 2004; Kernberg *et al*., 2008). For example, Kernberg *et al.* (2008) developed transference focused psychotherapy (TFP), which aims to help patients identify and address the emotional and interpersonal dynamics that contribute to borderline personality structure (*i.e.*, identity diffusion, immature defensive functioning, distorted perception of reality) and develop more integrated and adaptive ways of thinking, feeling, and behaving. TFP argues that patients with borderline personality disorder (BPD) have polarized (good *versus* bad) views of both themselves and others, which eventually lead to maladaptive behaviors (*e.g.*, impulsivity, demandingness, amendments to negate painful mental states). During therapy, patients are expected to enact their problematic dyadic perceptions in their interactions with the therapist, who interprets these interactions progressively so that patients can integrate their conflicting views of themselves and others.

Empirical literature on transference interpretation

Since the 1970s, psychodynamic psychotherapy process and outcome research have investigated the effects of TI *via* naturalistic, quasi-experimental, and experimental studies (Høglend, 2014; Levy & Scala, 2012). TI is proposed to be an active agent in facilitating therapeutic alliance, managing patients' feelings and thoughts, and working on their psychic organization and identity integration (Crits-Christoph & Gibbons, 2021; Gabbard & Horowitz, 2009; Giovacchini, 1979; Joseph, 1985; Tyndale, 1999). Experimental studies, such as the First Experimental Study of Transference Interpretations (FEST) (Høglend *et al*., 2006), opened up new horizons in psychotherapy research regarding their rigorous study design and thought-provoking results. FEST investigated the effects of TIs on outcome variables by comparing patients who received frequent TIs to patients whose therapists were requested to refrain from interpreting transference during one-year psychodynamic psychotherapy (Høglend *et al*., 1993, 2008; Ulberg *et al*., 2021). On the other hand, observational studies assessed the frequency or proportion of TIs given during different phases of therapy sessions primarily by using standardized rating scales (*e.g.*, therapist intervention rating system, transference work scale) (Ogrodniczuk *et al.*, 1999; Piper *et al*., 1986).

Existing studies exploring TI and its effects have mainly assessed psychodynamic functioning, psychiatric symptoms, therapeutic alliance, interpersonal functioning, and the number of dropouts as outcome measures. The specific characteristics of patients (*e.g.*, the quality of object relations), quantity and quality of TIs, immediate patient responses, and therapist-patient relationship have been found to be important factors impacting the potential of TIs to create change (Banon *et al*., 2001; Piper *et al.*, 1991).

Another highlight of TI-outcome research is that TI is a "high-risk, high-gain phenomenon", meaning its interpretation is likely to follow two paths: an increase in patient defensiveness along with ruptures in the therapeutic alliance or an increase in insight and relational functioning (Gabbard *et al*., 1994; Hersoug *et al*., 2014; McCullough *et al.*, 1991). For example, frequent interpretation of transference is shown to bring a less favorable outcome as well as a weakened therapeutic alliance across different forms of analytic therapies, including ones with high-level personality organization patients (Crits-Christoph & Gibbons, 2021; Luyten *et al.*, 2012; Piper *et al.*, 1991). In contrast, the main results of the FEST revealed both treatments to have similar effects on the outcome at termination and 3-year follow-up. Moderator analyses showed that patients with low-quality of object relations and/or personality disorders benefited from unique positive effects of TI compared to patients with high-level personality structure (Hersoug *et al.*, 2014; Høglend *et al.*, 2006; Høglend *et al.*, 2008).

Lastly, the disaccord observed in research findings might result from the wide variety of factors that might influence the link between TI and outcome, such as its frequency, intensity, accuracy, timing, valence, and content (Ulberg *et al*., 2014). For in-

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stance, it is known that therapists tend to increase the frequency of their TI when patients are more defensive and when a rupture is experienced within the relationship, which does not resolve the strains in the alliance (Høglend, 2004). Another reason would be the difficulty of making an empirically succinct definition of TI. Hobson and Kapur (2005, p. 281) suggested three distinguishing characteristics among TIs employed in the research studies: "(a) how the interpretations are anchored, (b) to which features of patient-therapist interaction they are directed; and (c) the kind of patient-therapist engagement they appear to foster". It is therefore suggested to remain cautious when making generalizations on the therapeutic effectiveness of TIs; what is considered a TI may vary in different empirical studies.

Aim of the systematic review

Studies carried out so far have provided conflicting evidence concerning the relationship between TI and outcome variables, leading to confusion for empirically informed clinicians. To date, there have been prior efforts to review the literature on the relationship between interpretations of any kind and outcome (Antichi *et al*., 2022; Crits-Christoph & Gibbons, 2021; Zilcha-Mano, Fisher, *et al*., 2023; Zilcha-Mano, Keefe, *et al*., 2023), and TI and therapy outcome (Brumberg & Gumz, 2012; Høglend, 2004, 2014; Levy & Scala, 2012). However, to the best of our knowledge, the current study constitutes the only and the most up-to-date (Brumberg & Gumz, 2012) review of the literature employing a rigorous systematic approach with a specific focus on objectively measured TI (Crits-Christoph & Gibbons, 2001; Høglend, 2004, 2014; Levy & Scala, 2012). As a response to the pressing need to comprehensively and systematically summarize and describe the current literature on the relationship between TI and outcome variables, the present systematic review aims to contribute to efforts to close this gap in the literature.

Methods

Information sources and search procedure

The systematic search of the current review was conducted on February 28, 2022. Due to the time gap between the conclusion of our systematic search and the submission of the study, the articles published after this date were hand-searched and assessed for eligibility (Diamond *et al.*, 2023). The American Psychological Association PsycInfo, MEDLINE, and the Web of Science Core Collection were selected as the primary databases for the literature search. The following words were entered as search terms: ((transference OR patient-therapist relation* OR therapist-patient relation*) AND interpretation AND (psychodynamic OR psychoanalytic* OR dynamic* OR analytic* OR supportive-expressive) AND (psychotherapy OR treatment OR therapy) OR transference-focus*). During the identification phase, the 'abstract' option was selected in search engines.

Prior systematic reviews and meta-analyses on TI were also checked through PROSPERO and the Campbell Collaboration to access the latest compiles of relevant information. Through the Cochrane Central Register of Controlled Trials, further clinical trials were checked. Lilliengren's list (2017), a regularly updated compendium of psychodynamic clinical trials, was also consulted specifically for controlled trials investigating psychodynamic psychotherapies. The database for unpublished study searches (*e.g.*, doctoral dissertations, conference papers, and preprints) was selected as Proquest. Four review articles were especially helpful in tracking the previous theoretical and empirical work on TI (Brumberg & Gumz, 2012; Høglend, 2004, 2014; Levy & Scala, 2012). Prominent researchers in the field of transference and its interpretation were contacted to identify additional applicable studies. A bibliographic review of the included studies was performed to avoid missing any relevant studies.

Eligibility criteria

During the full-text reading, the articles were selected based on the inclusion and exclusion criteria. The inclusion criteria for the current systematic review were as follows: publication date from 1970 onward, written in English, inclusion of patients older than 18, inclusion of more than ten subjects in the study, and investigation of a psychodynamic therapy of psychopathology other than psychosis with its relation to therapy outcome. Naturalistic and experimental designs (*e.g.*, quasi-experimental), but not case studies and qualitative designs, were included. Studies with unsuitable publication types (*e.g.*, theoretical papers, manuals, review articles) were extracted. When there were multiple publications based on the same research study, only one study that included a detailed description of the study design was included and presented in the review (*e.g.*, eleven articles from the FEST Study between 2006 and 2020).

Screening, selection process, and data extraction

The screening and selection of the articles were performed based on the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) (Page *et al*., 2021). The systematic review process is summarized in detail in Figure 1. Following the acquisition of the complete list of articles identified with the search terms, duplicates were removed both manually and *via* Zotero. The identification of relevant studies was performed by one reviewer (DH) to winnow down the large pool of studies.

Abstracts were then screened, which was followed by the retrieval and selection of articles based on the eligibility criteria. Abstract screening and selection of eligible articles were independently undertaken by two authors (DH, KKT, and MY, KKT, respectively), who reached substantial inter-rater agreements with Cohen's κ=.78 and κ=.77. In cases of disagreement regarding the inclusion of a publication, reviewing authors discussed their decisions until they reached a consensus. If not possible, a third reviewer was involved to reach a final decision.

Two reviewers (MY and KKT) extracted the following data reported in the eligible studies on an electronic sheet: authors, publication year, search strategy (*i.e.*, *via* a search engine, hand search), title, study design (experimental control), sample size, gender proportion, mean age (or age range, depending on the data availability), quality index, patient population, number of therapists, intervention type, treatment frequency, treatment duration, the measure of transference, operationalization of transference, outcome measure, and results.

Assessment of the quality of included studies

The assessment of study quality was performed by one of the authors (LZ) using the Newcastle-Ottawa Scale, through which a quality index ranging from 0 to 7 was obtained. Details on the applied criteria and the quality indices derived for each study can be found in *Supplementary Tables 1 and 2*, respectively.

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Results

The first search strategy identified 1593 potentially eligible articles; following the removal of duplicates, 825 studies remained. Through the application of inclusion and exclusion criteria, a full-text assessment was carried out on 49 articles. Of these, 19 articles met all inclusion/exclusion criteria; 6 further publications were identified through a hand search. To avoid redundancies, articles that presented previously published data were considered one study. The present systematic review is therefore based on the data derived from 21 studies (25 articles in total); Table 1 provides an overview of their characteristics (Clarkin *et al*., 2001; Clarkin *et al*., 2007; Connolly *et al*., 1999; Doering *et al*., 2010; Fischer-Kern *et al*., 2015; Hoglend *et al*., 1993; Hoglend *et al*., 2006; Klein *et al*., 2003; Levy *et al*., 2006; Malan, 1976; Marmar *et al*., 1989; Marziali, 1984; Milbrath *et al*., 1999; Ogrodniczuk *et al*., 1999; Perez *et al*., 2016; Piper *et al*., 1986; Piper *et al*., 1991; Piper *et al*., 1999; Ryum *et al*., 2010; Sahin *et al*., 2018; Schut *et al*., 2005). In the following sections, all included articles have been described according to the general characteristics of the studies, characteristics of the interventions, measurement of transference, measurement of outcome, and type of experimental control.

General characteristics of the studies

A total of 21 studies examining the relationship between TI and therapy outcomes were retrieved; of these, three included

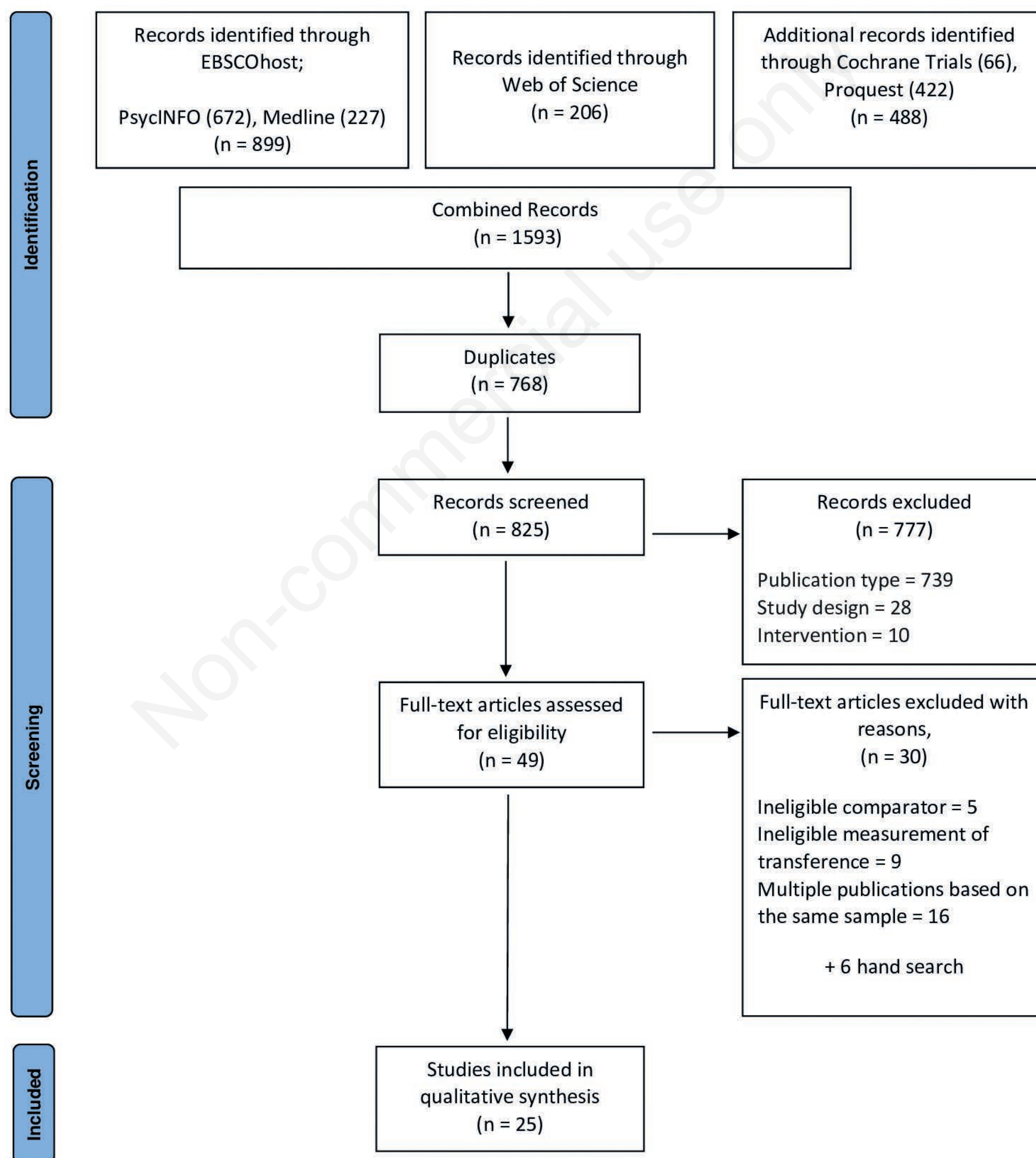

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Figure 1. Study selection procedure based on the Preferred Reporting Items for Systematic Reviews and Meta-Analyses: the PRISMA statement.

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data also presented in other articles (Doering *et al*., 2010; Fischer-Kern *et al*., 2015; Høglend *et al*., 2006).

The publication dates of the included studies ranged from 1976 to 2023, and the quality indices varied between 4 and 7. In total, 1013 participants were included in the current systematic review, 832 of whom were female. Participants' ages ranged from 18 to 65 years, and the sample size ranged from 10 to 106 participants. In terms of sex distribution, the majority of the studies included both males and females, whereas only five studies exclusively recruited women (Clarkin *et al*., 2001; Doering *et al*., 2010; Fischer-Kern *et al*., 2015; Milbrath *et al.*, 1999; Perez *et al.*, 2016). In four out of the five female-only studies, the sample was comprised of females with a diagnosis of BPD (Clarkin *et al.*, 2001; Doering *et al.*, 2010; Fischer-Kern *et al.*, 2015; Perez *et al.*, 2016); the remaining study recruited females with normal or pathological grief (Milbrath *et al.*, 1999). When considering patient characteristics in all 21 included studies, eight recruited patients with mixed diagnoses, 7 recruited BPD patients, and the remaining recruited patients diagnosed with MDD (Connolly *et al*., 1999), panic disorders (Klein *et al.*, 2003), pathological grief (Marmar *et al*., 1989; Milbrath *et al*., 1999), cluster C personality disorders (Ryum *et al*., 2010), and avoidant personality disorder (Schut *et al.*, 2005).

Measure of transference

Details regarding the definition, operationalization, and measurement of TI within the included studies are specified in Table 2 (Buchheim *et al*., 2017; Clarkin *et al*., 2001, 2007; Connolly *et al*., 1999Diamond *et al*., 2023; Doering *et al*., 2010; Fischer-Kern *et al*., 2015; Hoglend *et al*., 1993; Hoglend *et al.*, 2006; Klein *et al*., 2003; Levy *et al*., 2006; Malan, 1976; Marmar *et al*., 1989; Marziali, 1984; Milbrath *et al*.,1999; Ogrodniczuk *et al*., 1999; Perez *et al*., 2016; Piper *et al*., 1986; Piper *et al.,* 1991; Piper *et al*., 1999; Ryum *et al*., 2010; Sahin *et al*., 2018; Shut *et al*., 2005); the table highlights how most articles refer to not only varying definitions of TI but also different methods of TI measurement.

In general, transference was either measured, manipulated, or assumed (*i.e*., TI being by definition a part of the therapy model, such as TFP). In seven studies, transference was assumed by the authors due to the use of a form of psychodynamic psychotherapy that presumed the use of TI within its process; of these, six made use of TFP (Clarkin *et al*., 2001; Clarkin *et al*., 2007; Doering *et al*., 2010; Fischer-Kern *et al*., 2015; Levy *et al*., 2006; Perez *et al.*, 2016), whereas the remaining study used object-relational psychotherapy (Sahin *et al*., 2018). All seven studies where transference was only assumed were conducted on BPD patients.

On the other hand, all 14 studies that included measurements of TI used different rating scales or methods of TI assessment. Several studies described utilizing a measure of score, frequency, proportion, or average number of TIs either based on a rating scale or a rater's coding. For example, Ogrodniczuk *et al.* (1999) used the Therapist Intervention Rating System to calculate TI frequency. Other than one study that also measured TI frequency (Marziali, 1984), others evaluated TI delivery as the proportion of TIs over other forms of interpretation (Malan, 1976; Piper *et al.*, 1986; Piper *et al.*, 1991) or an average of TI frequency across specific sessions (Connolly *et al.*, 1999). Finally, several studies utilized Likert-type scores (*e.g*., 0-not at all or 5-great deal) from rating scales measuring TI (Klein *et al.*, 2003; Marmar *et al*., 1989; Piper *et al*., 1999; Ryum *et al*., 2010).

The remaining articles made use of other assessment scales, such as the Vanderbilt Psychotherapy Process Scale (Piper *et al*., 1999), the Transference Focus Factor in the Interactive Process Assessment (Klein *et al*., 2003), the Therapist Action Scale (Marmar *et al*., 1989), the Psychodynamic Intervention Rating Scale (Milbrath *et al.*, 1999), and the Inventory of Therapeutic Strategies (Ryum *et al*., 2010). Importantly, the studies also varied in terms of whether TI was evaluated internally by the therapist or externally through a rater. In the latter case, ratings were based on either transcripts of the sessions (Connolly *et al*., 1999; Marziali, 1984; Schut *et al.*, 2005) or the therapist's notes (Malan, 1976); for further details, see Table 2.

Finally, two articles actively manipulated TI by subdividing the sample into patients to whom TI was delivered and patients to whom TI was withheld (Høglend *et al*., 1993; Høglend *et al*., 2006). Both studies had similar characteristics: they included a sample of patients with mixed diagnoses, made use of dynamic psychotherapy once per week, and included blind raters who had the role of evaluating whether TI was delivered or withheld.

Characteristics of the interventions

Irrespective of transference being measured, assumed, or manipulated, all 21 studies included some form of psychodynamic psychotherapy (see column "Type of Dynamic Intervention" in Table 1). In general, the number of therapists per study that performed the interventions ranged from 3 to 31, with one study failing to specify the number of therapists (Malan, 1976). On the other hand, treatment frequency was highly standardized, with all 21 studies using a frequency of either once or twice per week. The range of treatment duration was instead quite wide, varying from 6 weeks to over a year, with six studies specifying that treatment duration was standardized to 1 year. As can be seen in Table 1, the interventions with the longest duration were often less standardized, and their characteristics were less clear. For example, a study by Malan (1976) reported 400 sessions; however, details regarding the frequency of the sessions or the number of therapists performing the interventions were unclear.

The most used and standardized form of therapy was TFP, with six articles having performed this type of intervention. These six studies have several common characteristics. Firstly, they all had a treatment frequency of twice per week, and five of the six studies also had an identical treatment duration of 1 year (Clarkin *et al.*, 2001, 2007; Doering *et al.*, 2010; Fischer-Kern *et al*., 2015; Levy *et al*., 2006); the remaining study that performed TFP therapy reported an average of 76.60 sessions for each participant (Perez *et al*., 2016). Finally, in all six studies, the sample consisted of BPD patients.

Of the remaining articles, two refer to using dynamic psychotherapy (Høglend *et al*., 1993; Høglend *et al*., 2006). As opposed to those that used TFP, the studies that included dynamic psychotherapy had a lower treatment frequency of once per week and a highly variable duration that ranged from 9 weeks to 1 year. It should be noted that both studies included patient samples with mixed diagnoses; articles that recruited their sample based on a specific diagnosis refer to using a more specialized form of dynamic psychotherapy that is more focused on the characteristics of their sample. For example, panic-focused dynamic psychotherapy was used on patients with panic disorders (Klein *et al.*, 2003), and dynamic psychotherapy for stress response syndromes was used on patients with pathological grief (Milbrath *et al*., 1999).

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Table 1. An overview of the studies' characteristics.

Study	Sample size (females)	Mean age (SD) or age range	Quality index (0-7)	Patient population	Number of therapists	Type of dynamic intervention	Treatment frequency	Treatment duration	Transference measure	Outcome measure	Experimental control
Clarkin *et al.*, 2001	17 (17)	32.7 (7.52)	6	BPD patients	12	TFP	2x per week	1 year	Assumed	Parasuicidal History*; Treatment History*	Pre-post
Clarkin *et al.*, 2007	90 (83)	30.9 (7.84)	7	BPD patients	19	TFP	2x per week	1 year	Assumed	Overt-Aggression Scale-Modified*; Anger, Irritability, and Assault Questionnaire*; Barratt Impulsiveness Scale-II*; Brief Symptom Inventory*; BDI*; GAF*; Social Adjustment Scale*	Pre-post; Intervention type (Dialectical Behavior Therapy; Dynamic Supportive Treatment)
Connolly *et al.*, 1999	29 (22)	37 (10)	5	MDD patients	4	Supportive-Expressive Therapy	n.s.	16 weeks	TI average rating in sessions 2-4	BDI*; Hamilton Rating Scale for Depression*	Pre-post
Doering *et al.*, 2010	104 (104)	27.46	7	BPD patients	31	TFP	2x per week	1 year	Assumed	Number of dropouts; Cornell Interview for Suicidal and Self-Harming Behavior*; DSM-IV criteria for BPD and SCID-I & II comorbidities*; GAF*; BDI	Pre-post; Intervention type (Experienced Community Psychotherapists)
Fischer-Kern *et al.*, 2015 (described in Buchheim *et al.*, 2017 and Diamond *et al.*, 2023; same sample as Doering *et al.*, 2010)	92 (92)	18-45	7	BPD patients	31	TFP	2x per week	1 year	Assumed	AAI*; Structured Interview of Personality Organization*	Pre-post; Intervention type (Experienced Community Psychotherapists)
Hoglend *et al.*, 1993	43 (29)	32	6	Patients with mixed diagnoses	7	Dynamic psychotherapy	1x per week	Ranged from 9 to 53 weeks	External raters evaluated use of TI	GAS; Estimated change in: interpersonal relations, self-esteem, cognitive learning, self-understanding/insight, problem-solving (7-point scales)	Pre-post; TI delivery *vs* TI withholding
Hoglend *et al.*, 2006 (described in Hoglend *et al.*, 2008 and Johansson *et al.*, 2010)	52 (26)	37.8 (8.7)	7	Patients with mixed diagnoses	7	Dynamic psychotherapy	1x per week	1 year	External raters evaluated use of TI	Psychodynamic Functioning Scales; GAF; Inventory of Interpersonal Problems; Global Severity Index; SCL-90-R	Pre-post; TI *vs* no TI

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Table 1. Continued from previous page.

Study	Sample size (females)	Mean age (SD) or age range	Quality index (0-7)	Patient population	Number of therapists	Type of dynamic intervention	Treatment frequency	Treatment duration	Transference measure	Outcome measure	Experimental control
Klein *et al.*, 2003	21 (14)	32 (7.76)	5	Patients with panic disorder	6	Panic-focused Dynamic Psychotherapy	2x per week	12 weeks	Transference Focus factor in Interactive Process Assessment	Panic Disorder Severity Scale*; Sheehan Disability Scale; Hamilton Anxiety Scale*	Pre-post
Levy *et al.*, 2006	90 (84)	18-50	7	BPD patients	8	TFP	2x per week	1 year	Assumed	AAI*; Reflective Functioning scale*	Pre-post; Intervention type (Dialectical Behavior Therapy; Psychodynamic Supportive Therapy)
Malan, 1976^	30 (16)	31.4	6	Patients with mixed diagnoses	***	Psychodynamic psychotherapy	n.s.	3-400 sessions	Number of TIs divided by total number of interpretations	Malan's Global Outcome Scale*	Pre-post
Marmar *et al.*, 1989^	52 (50)	39 (15)	6	Patients with pathological grief	9	Brief dynamic psychotherapy	1x per week	12 weeks	Therapist Action Scale	California Therapeutic Alliance Rating System	None
Marziali, 1984	25 (21)	27	6	Psychiatric outpatients with mixed diagnoses	9	Brief dynamic psychotherapy	1x per week	20 weeks	Frequency of interpretations	Derogatis Behavior Symptom Index*; Malan's Global Outcome Scale Modified*	Pre-post
Milbrath *et al.*, 1999^	20 (20)	40.2	6	Patients with normal/ pathological grief	9	Dynamic psychotherapy for stress response syndrome	1x per week	12 weeks	Psychodynamic Intervention Rating Scale	Brief Symptom Inventory; SCL-90; Brief Psychiatric Rating Scale; GAS	Pre-post
Ogrodniczuk *et al.*, 1999	40 (24)	36.9	4	Patients with mixed diagnoses	8	Interpretive Dynamic Therapy	1x per week	20 weeks	Frequency of TIs	Rating of Quality of Object Relations; therapist and patient therapeutic alliance ratings; battery to evaluate general symptomatology, social-sexual pathology, mature defenses and family pathology (details n.s.)	Pre-post
Perez *et al.*, 2016	10 (10)	27.8	6	BPD patients	5	TFP	2x per week	76.60 average sessions	Assumed	Multidimensional Personality Questionnaire; Affective Lability Scale*; Overt Aggression Scale*	Pre-post

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Table 1. Continued from previous page.

Study	Sample size (females)	Mean age (SD) or age range	Quality index (0-7)	Patient population	Number of therapists	Type of dynamic intervention	Treatment frequency	Treatment duration	Transference measure	Outcome measure	Experimental control
Piper *et al.*, 1986^	21 (15)	30	5	Patients with mixed diagnoses	3	Psycho-analytically oriented psycho-therapy	1x per week	22.6 weeks on average	Therapist Intervention Rating System (number of TIs as a proportion of total interpretations)	Interpersonal Behavior Scale*; Cattel's H from the Sixteen Personality Factor Questionnaire; Cornell Index; scores derived from patients' target objectives*	Pre-post
Piper *et al.*, 1991	64 (40)	32	4	Patients with mixed diagnoses	8	Dynamically oriented psychotherapy	1x per week	22.6 weeks on average	Therapist Intervention Rating System (number of TIs as a proportion of total interpretations)	Rating of therapeutic alliance through an ad hoc scale; "comprehensive set of outcome measures" regarding interpersonal function, psychiatric symptoms, self-esteem, and life satisfaction	Pre-post
Piper *et al.*, 1999	44 (26)	33	6	Patients with mixed diagnoses	8	Interpretive therapy	1x per week	20 weeks	Vanderbilt Psychotherapy Process Scale	Drop-out frequency*	Pre-post
Ryum *et al.*, 2010^	49 (24)	18-65	7	Patients with Cluster C personality disorders	8	Psychodynamic psychotherapy	1x per week	40 weeks	Inventory of Therapeutic Strategies	Inventory of Interpersonal Problems*; Helping Alliance Questionnaire	Pre-post; Intervention type (Cognitive Therapy)
Sahin *et al.*, 2018	106 (106)	19-50	6	BPD patients	14	Object-relational psychotherapy	2x per week	58.72 sessions on average	Assumed	GAF*; Parasuicide History Interview	Pre-post; Intervention type (Dialectical Behavior Therapy; Treatment as usual)
Schut *et al.*, 2005	14 (9)	35.9	5	Patients with Avoidant Personality Disorder	6	Supportive-Expressive Therapy	1x week	52 weeks	Evaluation of therapist interventions (as described by Connolly *et al.*, 1998)	Beck Anxiety Inventory; BDI; GAF; Inventory of Interpersonal Problems; Wisconsin Personality Disorders Inventory*	Pre-post

*p<.05; BPD, borderline personality disorder; MDD, major depressive disorder; GAF, global assessment of functioning; BDI, beck depression inventory; GAS, global assessment scale; ^article that was found by hand search.

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Table 2. Definition, operationalization and measurement of transference interpretation.

	Definition quoted from the article	Measurement	Measurement tool
Assumed			
Clarkin *et al.*, 2001, 2007; Levy *et al.*, 2006; Doering *et al.*, 2010; Buchheim *et al.*, 2017; Fischer-Kern *et al.*, 2015; Diamond *et al.*, 2023	"TFP relies principally on the techniques of clarification, confrontation, and interpretation within the evolving transference relationship between the patient and the therapist." "The primary focus of transference-focused psychotherapy (TFP) is on the dominant affect-laden themes that emerge in the relationship between patient and therapist."	Not applicable	Not applicable Experts regularly supervised all treatments and therapists on a weekly basis based on videotaped sessions to secure therapist adherence and competence without a validated adherence rating system.
Perez *et al.*, 2016	"Transference-focused psychotherapy (TFP) is an evidence-based treatment for BPD, developed by Kernberg and colleagues that relies on techniques of clarification, confrontation, and interpretation of affect-laden themes that emerge within the transference relationship."	Not applicable	Not applicable
Sahin *et al.*, 2018	"A version of psychodynamic therapy derived from TFP, which we refer to as object-relational psychotherapy"	Not applicable	Not applicable
Manipulated			
Hoglend *et al.*, 1993	"An explicit interpretive reference to the patient's relationship with the therapist is defined as a transference interpretation."	High *vs* low transference groups	Peer Supervision Clinicians followed supervision to ensure adequate technical implementation and two raters' interrater reliability is measured based on the frequency of TI per session without a validated adherence rating system.
Hoglend *et al.*, 2006	"In FEST transference interventions are organized in five categories… These categories of transference work combine the relational (modernist) construction of transference (categories 1 through 3; 'addressing interaction' and 'encouraging the patient to explore thoughts, feelings and fantasies about the therapist and the therapy') with the traditional construct of transference in relationship (category 4 and 5; 'connections between repetitive elements in the patient's relationships with other persons out of therapy and the patient's relationship with the therapist')." (Ulberg, Amlo, & Høglend, 2014)	High *vs* low transference groups	Various Transference Technique Scales Differences between treatment groups were ensured by the interrater reliability scores measured by the clinician codings of sessions from each therapy.
Process Measure (Frequency, Proportion, Score of TI)			
Connolly *et al.*, 1999	"Transference interpretations are defined as interpretations that help the patient to understand the link between their interactions with the therapist and the interactions they experience with others" "We defined transference interpretations as one type of interpretation that specifically including the therapist as an object of the statement"	Proportion TI averaged in three early sessions (session 2,3,4)	Coded by ratersIn dependent assessors coded therapist speaking turns into 'response mode' groups investigated in a prior study on the types of therapist responses in brief dynamic therapy (Connolly, Crits-Christoph, Shappell, Barber, & Luborsky, 1998)
Klein *et al.*, 2003	"...the therapist's focus on the transference relationship…represents a broadly defined focus on the transference, from encouraging the patient to express ideas and fantasies about the therapist, to interpreting transference experiences in relation to the patient's earlier relationships with parents and significant figures during childhood."	Score The score of the IPA factor of 'Therapist Focus on Transference' at each time period: early treatment, mid-treatment, and latetreatment	The Interactive Process Assessment IPA (Klein, Milrod, and Busch, 1999) is a 20-item scale with a 0 ('not present'), 1 ('present'), and 2 ('major focus in the session') scoring system that was established specifically to examine key elements of psychodynamic therapy (six factors), including the specific procedures utilized for certain diagnostic problems, such as panic disorder

To be continued on next page

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Table 2. Continued from previous page.

	Definition quoted from the article	Measurement	Measurement tool
Malan, 1976	"a major interpretation making the therapist/parent link"	Proportion The number of TIs (1) TP link, (2) TO link, and (3) TIs excluding those making links of any kind) divided by the total number of all types of interpretations	Coded by raters Trained coders locate the patient's statements from therapist's session notes that could be qualified as interpretations without a validated process measure but on the coder's judgment
Marmar *et al.*, 1989	'Link reaction toward therapist to parents', 'Discuss avoidance', 'Address view of therapist'	Score Likert-scale ranging from 0 (did not do it) to 5 (major emphasis)	Therapist Action Scale TAS (Hoyt, Marmar, Horowitz, Alvarez, 1981) is a 27-item list of therapist actions (*e.g.*, resistance, transference interpretations, questioning, advising) with their all possible expressions (verbal and nonverbal, conscious and unconscious, deliberate and unintended).
Marziali, 1984	"Interpretations that associated thoughts, behaviors, and/or feelings toward the therapist with an important person in the past (parent or sibling) and a significant person in the patient's current network of relationships"	Frequency The number of TI of each of the following combinations: T, TP, TO, or TPO	Coded by raters Same as Malan (1976) study however based on the transcripts of session recordings
Milbrath *et al.*,1999	"Transference interpretations are defined broadly, with the idea that even if the therapist is addressing non-transference aspects of the patient–therapist relationship, the intervention is qualitatively different from interpretations that do not include this relationship."	Proportion Mean proportions of TI from one session selected from 12 sessions	Psychodynamic Intervention Rating Scale PIRS (Cooper & Bond, 1992) is a therapeutic intervention scale which assesses all therapist utterances on whether they are interpretive (defense and transference interpretations) and noninterpretive techniques (acknowledgment, clarification, questions, associations, reflections, work-enhancing and support strategies, contractual arrangements)
Ogrodniczuk *et al.*, 1999	"The therapist making reference to the patient's reaction to him or her, which is to some extent determined by the patient's previous relationships"	Frequency The total number of TIs across sessions	Therapist Intervention Rating System TIRS (Piper *et al.*, 1987) is a process assessment with various categories of therapy techniques including interpretation of non-dynamic and dynamic components (*i.e.*, impulses, anxiety, defenses, affective expressions) along with the specification of objects and links between objects (*e.g.*, mother, therapist, other person)
Piper *et al.*, 1986, 1991	"An interpretation was defined as the therapist's reference to the components of intrapsychic conflict…transference interpretation is operationally defined as an interpretation that includes a reference to the therapist." "An example of a T/P link is, 'What happens when you are disappointed in me resembles what follows disappointment in your father".	Proportion The number of TIs divided by the total number of all types of interpretations across sessions	Therapist Intervention Rating System (described above)
Piper *et al.*, 1999	"Dealt with interpersonal dynamics between himself or herself and the patient"	Score Likert-scale ranging from 0 (not at all) to 5 (great deal)	Vanderbilt Psychotherapy Process Scale VPPS (Suh, Strupp, & O'Malley,1986) is an assessment tool created to evaluate both positive and negative behaviors and attitudes of the patient and the therapist that are anticipated to help or hinder therapy process, which can be grouped under three headings: Exploratory Processes, Patient Involvement, and Therapist-Offered Relationship.
Ryum *et al.*, 2010	"The transference work category is defined as an exploratory strategy with "therapist as the main object."	Score Likert-scale ranging from 0 (not addressed) to 7 (major emphasis)	Inventory of Therapeutic Strategies ITS (Gaston & Ring, 1992) is 13-item rater-based assessment tool that categorizes therapeutic treatments into three categories: goal (exploratory, supportive, or work-enhancing), content, and object focus (*e.g.*, the therapist, others, or self).
Shut *et al.*, 2005	(same as described in Connolly *et al.*, 1999)	Proportion (same as described in Connolly *et al.*, 1999)	Coded by raters (same as described in Connolly *et al.*, 1999)

TI, transference interpretation; T, therapist; TP, therapist-parent; TO, therapist-object (other individuals than the patient); TPO, therapist-parent-object; coded by raters, trained coders locate the patient's statements that could be qualified as interpretations.

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Another form of therapy that was performed on samples of patients with a specific diagnosis was the supportive-expressive therapy (Connolly *et al*., 1999; Schut *et al*., 2005); in this case, the articles were focused on patients with major depressive disorder and avoidant personality disorder, respectively. The characteristics of the remaining types of psychotherapies are summarized in Table 1 (Clarkin *et al*., 2001; Clarkin *et al*., 2007; Connolly *et al*., 1999; Doering *et al*., 2010; Fischer-Kern *et al*., 2015; Hoglend *et al*., 1993; Hoglend *et al*., 2006; Klein *et al*., 2003; Levy *et al*., 2006; Malan, 1976; Marmar *et al*., 1989; Marziali, 1984; Milbrath *et al*., 1999; Ogrodniczuk *et al*., 1999; Perez *et al*., 2016; Piper *et al*., 1986; Piper *et al*., 1991; Piper *et al*., 1999; Ryum *et al*., 2010; Sahin *et al*., 2018; Schut *et al*., 2005). Finally, studies that compared psychodynamic psychotherapy with another form of therapy that excluded TI delivery are described in the following paragraph.

Type of experimental control

In general, three forms of experimental control were used: pre-post intervention, comparison with another form of therapy, or manipulation of TI delivery. The only study not to include a form of experimental control assessed therapeutic alliance in a sample of patients diagnosed with pathological grief undergoing brief dynamic psychotherapy to validate the California Therapeutic Alliance Rating System (Marmar *et al.*, 1989).

The remaining 20 studies assessed the difference in one or more outcomes at different time points: before, during therapy, or at follow-up. Other than a pre-post form of experimental control, six studies also compared psychodynamic therapy, in which TI delivery is assumed, with another form of therapy in which the interpretation of transference is not a central focus of the intervention, such as in dialectical behavior therapy (Clarkin *et al*., 2007; Levy *et al*., 2006; Sahin *et al.*, 2018), dynamic supportive treatment (Clarkin *et al.*, 2007), psychodynamic supportive therapy (Levy *et al*., 2006), and cognitive therapy (Ryum *et al.*, 2010). In two studies, rather than performing different forms of therapy, patients were subdivided into a group that underwent TFP and one in which therapy was simply carried forth by experienced community psychotherapists, in which it was assumed that TI would not be used (Doering *et al*., 2010; Fischer-Kern *et al*., 2015).

Finally, as previously mentioned, the last form of experimental control was the manipulation of TI delivery, in which TI was either actively delivered or withheld, with the assistance of external raters evaluating the process (Høglend *et al*., 1993; Høglend *et al*., 2006).

Measure of outcome

13 out of 21 (62%) included studies were able to observe a significant improvement in at least one therapy outcome measure following the use of TI in therapy. However, despite this result, no studies measured the same combination of outcomes, and the percentage given should be interpreted cautiously (*e.g*., within 13 studies, there are negative results on specific measures along with positive results on the remaining measures) (see column Outcome Measure in Table 1).

Due to the differing characteristics of the patient populations in the included studies, the outcome measures that were taken into consideration were highly heterogeneous. For example, Klein *et al.* (2003) observed a reduction in panic symptoms in patients with panic disorder following a 12-week panic-focused dynamic psychotherapy, whereas patients with cluster C personality disorders seemed to benefit in terms of interpersonal problems from a low dose of TI (Ryum *et al*., 2010). On the other hand, studies with mixed patient populations found improvements in global outcomes, such as Malan's Global Outcome Scale (Malan, 1976; Marziali, 1984).

The most consistent and wide-ranging results have been observed in BPD patients who underwent a yearlong TFP treatment. These patients significantly improved in terms of suicide attempts, hospitalization, impulsivity, aggression, irritability, and anger (Clarkin *et al*., 2001; Clarkin *et al*., 2007; Doering *et al*., 2010; Perez *et al*., 2016); most importantly, the same patients also showed a reduction in BPD diagnostic criteria and an improvement in personality organization (Doering *et al*., 2010). Interestingly, two of these studies also observed an improvement in the capacity for reflective functioning, as measured by the Reflective Functioning Scale based on the Adult Attachment Interview (Fischer-Kern *et al*., 2015; Levy *et al*., 2006).

On the contrary, several studies either failed to find significant results on specific outcome measures due to TI in therapy or even observed a negative effect of TI on therapy outcomes. For example, Piper *et al.* (1991) found an inverse relationship between the proportion of TIs and both therapeutic alliance and therapy outcome in patients with a history of high-quality object relations. The result was supported by further studies that failed to demonstrate a difference in therapeutic outcomes when TI was delivered or withheld from a sample of patients with mixed diagnoses (Høglend *et al*., 2006). Moreover, some studies show a significant negative effect of a high number of TIs on long-term dynamic outcomes (Høglend *et al*., 1993), on defensive style and family functioning (Ogrodniczuk *et al*., 1999), on levels of depression in patients suffering from major depressive disorder (Connolly *et al.*, 1999), on alliance variables such as patient commitment and patient working capacity (Marmar *et al.*, 1989), and on global functioning (Schut *et al*., 2005). Finally, Milbrath *et al.* (1999) observed that TI was not correlated with any measures assessing symptomology and functioning.

It is important to note that the studies often listed numerous variables that were not ultimately statistically analyzed or included as an outcome within the results; nonetheless, all reported outcomes for each individual study, including those that resulted as significantly improved, are specified in Table 1 (Clarkin *et al*., 2001; Clarkin *et al*., 2007; Connolly *et al.*, 1999; Doering *et al*., 2010; Fischer-Kern *et al.*, 2015; Hoglend *et al*., 1993; Hoglend *et al*., 2006; Klein *et al*., 2003; Levy *et al*., 2006; Malan, 1976; Marmar *et al*., 1989; Marziali, 1984; Milbrath *et al*., 1999; Ogrodniczuk *et al*., 1999; Perez *et al*., 2016; Piper *et al*., 1986; Piper *et al*., 1991; Piper *et al*., 1999; Ryum *et al*., 2010; Sahin *et al*., 2018; Schut *et al*., 2005).

Discussion

Despite constituting the key technical element that differentiates psychodynamic psychotherapies from other forms of therapies (*e.g*., cognitive-behavioral therapies), empirical evidence supporting the efficacy of TI lags behind its use and centrality in clinical practice (Cutler *et al*., 2004). Overall, this systematic review strived to contribute to the previous efforts to close the

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gap in the literature, highlighting the substantial differences in the characteristics of the studies that have explored the relationship between TI and therapy outcomes. Nonetheless, the observed results suggest that although the use of TI within dynamic psychotherapies is often associated with significant benefits, there are many factors at play in determining whether this technique is ultimately beneficial, or in some cases, even detrimental, to the therapeutic process.

The current systematic review analyzed 21 studies that explored the relationship between TI and therapy outcomes. The main finding of this study is the high heterogeneity observed in the designs of the studies, ranging from the operationalization of transference to the types of measures that were considered therapy outcomes. Regarding the conceptualization and operationalization of transference, most individual studies used varying definitions of TI, which were also reflected in the use of different methods of measuring, manipulating, or controlling for this variable within their study designs (see Table 2). The heterogeneity and lack of standardization also extended to the characteristics and descriptions of the interventions and the characteristics of the patients undergoing therapy.

Nonetheless, despite the high variability, 62% of included studies observed a statistically significant improvement in therapy outcomes linked to TI, suggesting that its inclusion within psychotherapy may bring notable benefits to patients. It is also important to note that the studies that failed to observe this result often did not consider a measure of outcome change at all (Marmar *et al*., 1989) or found more complex results that do not necessarily exclude the benefits of TI use within therapy. Instead, these results suggest that improper and excessive use of TIs may be detrimental and that the delicate relationship between transference and therapy outcome is interconnected to several other factors, such as frequency and proportion of TIs, as well as the patients' diagnosis and specific characteristics.

While Ogrodniczuk *et al.* (1999) found an inverse relationship between the frequency of TIs and both therapeutic alliance and favorable outcomes in individuals with low quality of object relations, their prior study (Piper *et al*., 1991) and the FEST results showed the opposite. The incongruence between these results might be due to the nature of the treatment characteristics [*i.e*., the proportion of TI was 6% in Ogrodniczuk *et al*. (1999) and in Piper *et al.* (1999) it was 12%]. On the one hand, the negative correlation between the proportion of TI and therapeutic outcome (*e.g*., interpersonal functioning, psychiatric symptoms) could be due to the interaction between the short duration of therapy and the patient's quality of object relations. Due to their more mature personality organization (*i.e*., integrated identity) and defensive functioning (*i.e*., neurotic or obsessional defenses such as repression or isolation of affect), patients with high-quality of object relations are more likely to repress negative internal object representations and build more neutral and/or positive therapeutic alliance with their therapists, starting from the very beginning of the treatment (Caligor *et al*., 2007; Conversano *et al*., 2023). More time might be needed with high-quality object relation patients for their repressed relational representations to unfold and reveal themselves within the therapeutic relationship in the form of transference, which could also be observable to the therapist to capture and interpret them. On the other hand, patients with low quality of object relations reveal their transference dynamics, characterized by negative and aggressive enactments, much sooner than patients with high quality of object relations. It could also be asserted that patients with low quality of object relations who are characterized by intense splitting and disavowal of traumatic experiences unconsciously act on their object relations within the therapeutic relationship, and the therapist's interpretations of these dynamics along with the therapist's stable presence negate the expected enactment of destructive and persecutory fantasies. This process might serve as a corrective emotional experience.

Limitations

The current systematic review has several limitations. Firstly, there was a small number of available studies. For this reason, the inclusion criteria that were applied in the selection process were not specific to a particular patient population, type of therapy, or method of TI measurement. This may have led to less standardization and more heterogeneity between studies; however, it also allowed for a more accurate portrayal of the current state of the literature on the subject as a whole. Furthermore, due to the lack of consensus in defining and operationalizing TI, it is important to remain cautious when attempting to generalize any observed results; what is considered TI in one study may vary in another.

Due to the aforementioned extreme variability regarding the measurement of transference, type of intervention, type of experimental control, and measurement of outcome, it was also chosen not to conduct a meta-analysis. Indeed, it seemed more critical and appropriate to systematically review the numerous methods and designs used throughout the years to explore the effects of TI in dynamic therapy before statistically testing its potential benefits *via* a meta-analysis. Finally, although the current study was limited to quantitative studies, several qualitative case studies in the field of TI may be of great interest (Banon *et al*., 2001; Goodman, 2011; Henriksen *et al*., 2021; Ulberg *et al*., 2014). In particular, when considering the mixed and complex results observed through the current systematic review, single-case designs and qualitative studies would allow researchers to explore the dynamics underlying TI use throughout the therapy process in greater detail; perhaps a systematic review limited to qualitative studies that investigates the relationship between TI and therapy outcome may be the next step.

Suggestions for future research

Based on the results of the present study, several suggestions could be given for future research. Understanding how TI and its specific components work and influence the therapy process and outcome requires more complex models. In this respect, prospective studies should investigate TI both as an independent variable that brings improvement in therapy outcomes when certain moderating factors (*e.g*., patient variables, insight) are included in the model and as a mediator itself to scrutinize its role as a core mechanism of therapeutic change in psychodynamic psychotherapy (Kazdin, 2007).

Moreover, since TI is a multi-factorial clinical phenomenon, including its timing, dosage, accuracy, and impact on the patient's psyche, it surpasses frequency measurement as commonly practiced in previous studies (Luborsky *et al.*, 1988; Luborsky & Crits-Christoph, 1990; Schut *et al*., 2005; Silberschatz *et al.*, 1986). As Malan (1976, pp. 210-211) suggested, "a single correct and well-timed interpretation may be all that is needed for a successful result…it seems to be much commoner that such an interpretation needs to be given on a number of different occasions in different contexts, and thus to be to some extent 'worked through' before therapeutic effects can be permanent". Thus, it would be erroneous to conclude that the less frequent

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the TI within a psychotherapy process, the better the outcome. For example, FEST studies found a negative relationship between the number of TIs and outcomes for patients with high-quality of object relations, differentiated treatment, and control groups based on the frequency of TI per session. Although it was valuable as a starting point, future research should move beyond the assessment of frequency by investigating clinically relevant factors such as timing, accuracy, and impact of TIs both in session and throughout therapy.

Another important point to consider within the context of psychotherapy research is allegiance bias, which refers to the possible bias of researchers toward adherence to a specific psychotherapy approach while conducting research and assessing the efficacy of their psychotherapy approach (Leichsenring *et al*., 2017). Allegiance bias might lead to an inflated effect size for the observed effect. Most of the existing studies on TI dominantly include researchers and clinicians from the psychodynamic approach. Most of the existing studies on TI include researchers and clinicians from the psychodynamic approach. In future studies, researchers could collaborate with colleagues using different methods to reduce allegiance bias to a minimum. Finally, to assess the real-life effectiveness of TIs and the generalizability of the findings, conducting pragmatic controlled trials (*e.g*., flexibility in the interpretation of the intervention, minimal exclusion criteria) may be an aim for future research on the effects of TI on therapy outcomes (Godwin *et al.*, 2003).

Conclusions

To sum up, accumulated evidence suggests that TI should be used meticulously with consideration of various patient and therapy process factors and further empirically investigated by means of appropriate measurement tools and experimental manipulation. Current results show that TI brings favorable outcomes in psychodynamic psychotherapy, such as significant decrease in symptom severity and maladaptive behaviors, as well as improvements in psychodynamic functioning and interpersonal relationships. Being one of the fundamental techniques of psychodynamic psychotherapy, TI must receive significantly more attention and research effort, which would reinforce the current evidence base for psychodynamic practice.

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Online supplementary material:

Supplementary Table 1. The Newcastle-Ottawa Scale used in the present study for quality assessment (maximum 7 stars).

Supplementary Table 2. Details on the quality assessment indices for the retrieved studies.