

# Clinical applications of the Defense Mechanisms Rating Scale-Self-Report-30: a systematic review of the first five years

Gabriella Martino,<sup>1</sup> Orlando Silvestro,<sup>2</sup> Emanuele M. Merlo,<sup>3</sup> Carmelo M. Vicario,<sup>4</sup> Alessandro Meduri,<sup>3</sup> Gianluca Lo Coco<sup>5</sup>

<sup>1</sup>Department of Clinical and Experimental Medicine, University of Messina; <sup>2</sup>Department of Health Sciences, University Magna Graecia of Catanzaro; <sup>3</sup>Department of Biomedical and Dental Sciences and Morphofunctional Imaging, University of Messina; <sup>4</sup>Department of Cognitive Science, Psychology, Education and Cultural Studies, University of Messina; <sup>5</sup>Department of Psychology, Educational Science and Human Movement, University of Palermo, Italy

## ABSTRACT

Defense mechanisms are automatic psychological processes that regulate emotional conflicts and modulate adaptation to internal and external stressors. As implicit components of emotion regulation, they play a transdiagnostic role across psychological and physical domains of health. Among the available instruments, the Defense Mechanisms Rating Scales-Self-Report-30 (DMRS-SR-30) directly operationalizes

the hierarchical model of defenses, widely considered the gold standard framework for their empirical assessment. This systematic review aimed to synthesize findings from all studies that had employed the DMRS-SR-30 to date, summarizing its psychometric properties, domains of application, and clinical implications. Following the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines, a systematic search was conducted across PubMed, Scopus, and Web of Science databases. Eligible studies were full-text peer-reviewed articles written in English employing the DMRS-SR-30. Risk of bias was assessed according to study design using an established quality appraisal tool. Twenty-six studies met the inclusion criteria. The main domains of application were medical conditions, mental health and psychopathology, personality, and stress-related adjustment. Across these research areas, mature defenses were consistently associated with adaptive functioning and resilience, whereas immature and neurotic defenses predicted higher psychological distress, maladjustment, and psychopathology. The findings from the validation studies demonstrated that the scale exhibited robust reliability, construct validity, and clinical sensitivity. The DMRS-SR-30 provides a valid, efficient, and clinically meaningful method to assess the full hierarchy of defense mechanisms through a self-report tool. Its overall defensive functioning (ODF) index may offer an integrative measure of adaptive capacity that can complement standard psychodiagnostic and medical evaluations. Incorporating the assessment of defensive functioning can enhance the holistic understanding of patients, improve compliance with treatment, and promote person-centered care within mind-body health contexts.

Correspondence: Orlando Silvestro, Department of Health Sciences, University Magna Graecia of Catanzaro, Viale Europa, 88100 Catanzaro (CZ), Italy.  
E-mail: orlando.silvestro@unicz.it

Citation: Martino, G., Silvestro, O., Merlo, E. M., Vicario, C. M., Meduri, A., & Lo Coco, G., (2025). Clinical applications of the Defense Mechanisms Rating Scale-Self-Report-30: a systematic review of the first five years. *Research in Psychotherapy: Psychopathology, Process and Outcome*, 28(3), 881. doi: 10.4081/ripppo.2025.881

Contributions: GM made substantial contributions to the conception and design of the study, as well as to the acquisition, qualitative analysis, and synthesis of data, by drafting both the first and the revised versions of the manuscript; OS and EMM contributed to the acquisition, qualitative analysis, and synthesis of data and participated in drafting the first version of the manuscript; CMV, AM, and GLC made significant contributions to drafting specific sections of the manuscript and critically revised it for important intellectual content. All authors have read and approved the final version of the manuscript and agree to be accountable for all aspects of the work.

Conflict of interest: the authors declare no conflict of interest.

Ethics approval and consent to participate: not applicable.

Availability of data and materials: no new data were generated or analyzed in support of this research.

Received: 1 November 2025.

Accepted: 9 December 2025.

Publisher's note: all claims expressed in this article are solely those of the authors and do not necessarily represent those of their affiliated organizations, or those of the publisher, the editors and the reviewers. Any product that may be evaluated in this article or claim that may be made by its manufacturer is not guaranteed or endorsed by the publisher.

©Copyright: the Author(s), 2025

Licensee PAGEPress, Italy

*Research in Psychotherapy:*

*Psychopathology, Process and Outcome* 2025; 28:881

doi:10.4081/ripppo.2025.881

This article is distributed under the terms of the Creative Commons Attribution-NonCommercial International License (CC BY-NC 4.0) which permits any noncommercial use, distribution, and reproduction in any medium, provided the original author(s) and source are credited.

**Key words:** clinical psychology, implicit emotional regulation, defense mechanisms, defense mechanisms rating scale, DMRS-SR-30.

## Introduction

Originally described by Sigmund Freud in 1894, defense mechanisms are psychological mechanisms that protect individuals from experiencing anxiety in response to internal or external conflicts. According to Di Giuseppe and Perry, drawing on the American Psychiatric Association (2013) and Perry's work (2014), defenses can be defined as "automatic psychological mechanisms that mediate the individual's reaction to emotional conflicts and to internal or external stressors" (Di Giuseppe & Perry, 2021, p. 2). This definition highlights both the protective

and regulatory mechanisms of defenses, emphasizing their function in reducing tension while shaping overall psychological well-being. In this sense, defenses may be conceptualized as implicit processes of emotion regulation, operating automatically and mainly outside conscious awareness (Gyurak et al., 2011). The transtheoretical and transdiagnostic nature of defenses led to their empirical investigation, also supported by important achievements such as their inclusion in the *Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition (DSM-IV)* and the *Psychodynamic Diagnostic Manual, Second Edition (PDM-2)*, underscoring their clinical relevance in psychopathology (APA, 1994; Di Giuseppe, 2024; Lingiardi & McWilliams, 2017).

Scholarly perspectives on defense mechanisms have evolved considerably, reflecting ongoing theoretical elaboration and empirical validation (Brenner, 1981; Cramer, 1998, 2012, 2015a; Di Giuseppe et al., 2021a; Siegal, 1969; Silverman & Doorn, 2023), which have informed the development of several instruments designed for both empirical research and clinical practice (e.g., Bond et al., 1983; Cramer, 1991; Gleser & Ihlevich, 1969; Gleser & Sacks, 1973; Lerner, 2005; Plutchik et al., 1979). Some of these instruments have achieved substantial scientific credibility, reflecting robust psychometric properties and practical utility in assessing defensive functioning across diverse populations. The need to empirically investigate how defenses influence psychological functioning soon became evident (Cramer, 2015b; Di Giuseppe et al., 2021a; Lingiardi et al., 2010).

Building on Vaillant's seminal work (Vaillant et al., 1986), Perry (1990) introduced the Defense Mechanisms Rating Scales (DMRS), an observer-rated measure that remains the gold standard for the assessment of defense mechanisms. The DMRS identifies 30 defense mechanisms organized hierarchically into seven defense levels, which are further grouped into three overarching categories: immature, neurotic, and mature defenses. Immature defenses reflect limited awareness of internal conflicts and external stressors, often contributing to psychological vulnerability by impeding conscious recognition of distressing thoughts, feelings, or impulses. These defenses may offer temporary relief from tension but tend to perpetuate maladaptive functioning. Within this category, some mechanisms are closely linked to depressive states (e.g., acting out, passive aggression, help-rejecting complaining, projective identification, splitting, projection, and devaluation), whereas others counteract the recognition of depressive feelings (e.g., autistic fantasy, rationalization, denial, omnipotence, and idealization), each shaping how individuals cope with emotional challenges (Boldrini et al., 2020; Di Giuseppe et al., 2024a).

Neurotic defenses occupy an intermediate level of adaptiveness, allowing partial recognition of stressful experiences and enabling the individual to manage emotional or cognitive aspects of distress while keeping overwhelming content out of awareness (Mostowik et al., 2022; Perry & Henry, 2004). Mature defenses, by contrast, represent the highest level of adaptiveness. They promote awareness, integration, and constructive processing of emotions, thoughts, and desires, thereby supporting flexible and resilient responses to stressors and optimizing emotional regulation (Békés et al., 2023; Fiorentino et al., 2024).

Perry's hierarchical model laid the theoretical foundation for more user-friendly and empirically accessible instruments, such as the Defense Mechanisms Rating Scales-Q-Sort (DMRS-Q; Di Giuseppe & Perry, 2021) and the Defense Mechanisms Rating Scales-Self-Report-30 (DMRS-SR-30; Di Giuseppe et al., 2020a). Both tools maintain rigorous adherence to the established DMRS hierarchy (APA, 1994, 2013; Békés et al., 2021; Di Giuseppe & Perry, 2021; Drapeau et al., 2003; Hilsenroth et

al., 2003; Høglend & Perry, 1998; Lingiardi et al., 1999; Perry, 2014; Tanzilli et al., 2021).

A particularly valuable contribution to the empirical assessment of defenses is the DMRS-SR-30, a concise 30-item self-report instrument that provides an overall defensive functioning (ODF) index, proportional scores for the three defensive categories and seven hierarchical levels, and ratings for 28 individual defenses (Di Giuseppe et al., 2020a). In their validation study, Di Giuseppe and colleagues (2020a) reported excellent internal consistency (ODF Cronbach's  $\alpha = .89$ ) and strong criterion, concurrent, convergent, and discriminant validity against multiple defense and psychological measures. Subsequent investigations further confirmed its reliability and structural validity (Prout et al., 2022), with  $\alpha$  coefficients ranging from .75 to .90 and significant correlations with established defense measures (e.g.,  $r = .50$  for immature defenses). Recent cross-cultural validations have reinforced these findings. For instance, Yılmaz et al. (2024) found that the tripartite model of defenses achieved acceptable fit indices (Comparative Fit Index [CFI] = 0.89; Root Mean Square Error of Approximation [RMSEA] = 0.05) and reliability coefficients between .64 and .89, consistent with previous results. Importantly, correlations with symptomatology and personality functioning measures supported both convergent and discriminant validity, underscoring the cross-cultural robustness of the DMRS-SR-30 as a reliable and theoretically grounded self-report measure.

Given the growing interest in reliable and theory-driven measures of defensive functioning, the present systematic review aims to comprehensively examine the clinical and empirical applications of the DMRS-SR-30 across diverse populations and settings. Specifically, this review pursues the following objectives:

- i) To identify and synthesize the results of all peer-reviewed studies that had employed the DMRS-SR-30 in clinical or research contexts, highlighting its empirical contributions to the assessment of defensive functioning.
- ii) To evaluate the psychometric robustness, validity evidence, and clinical sensitivity of the instrument across different diagnostic groups, age ranges, and cultural contexts.
- iii) To explore the associations between defensive functioning, as assessed by the DMRS-SR-30, and key psychological constructs such as symptom severity, emotion regulation, personality organization, and treatment outcomes.
- iv) To discuss the clinical implications of DMRS-SR-30-based assessment, emphasizing its potential utility in identifying patterns of psychological adaptation that may affect treatment engagement, adherence, and therapeutic alliance.

By addressing these aims, this review seeks to bridge the gap between the theoretical understanding of defenses and their measurable impact on psychological adjustment and therapeutic processes. The synthesis of available evidence may clarify how the DMRS-SR-30 can serve as a cost-effective, empirically grounded, and clinically meaningful tool to integrate defense analysis into psychodiagnostic evaluation and psychotherapy research, ultimately contributing to improved compliance, emotional awareness, and adaptive functioning in clinical populations.

## Methods

The present review was conducted in accordance with the Preferred Reporting Items for Systematic Reviews and Meta-analyses (PRISMA) guidelines (Liberati et al., 2009; Moher et al., 2009) and the PRISMA 2020 checklist (Page et al., 2021, see *Supplementary Tables*).

## Search strategy

A systematic literature search was performed in Scopus, Web of Science, and PubMed in August 2025 to identify relevant studies. The search query was applied to the last five years, with no time restriction for earlier studies, using the following terms: “Defense Mechanisms Rating Scale Self-Report 30” OR “DMRS SR 30”. To align with the aim of the review, key words were restricted to explicit references to the DMRS-SR-30, maximizing coverage of studies employing the instrument.

## Inclusion and exclusion criteria

Studies were included if they met the following criteria: i) published as full-text articles in peer-reviewed journals; ii) written in English; iii) adopting a questionnaire-based empirical design; and iv) explicitly employing the DMRS-SR-30 as a measure of defensive functioning.

Exclusion criteria included books, conference abstracts, liter-

ature reviews, qualitative studies, case reports, and any research not employing the DMRS-SR-30 as part of the methodology.

## Selection process and data collection

The screening process was independently performed by two reviewers. After retrieving all records from the databases, duplicates were removed.

In the first screening phase, titles and abstracts were examined to identify potentially eligible studies. In the second phase, full texts were analyzed for eligibility based on the inclusion criteria. Additionally, reference lists of all selected papers were screened to identify further relevant studies that might not have appeared in the initial search.

A PRISMA flow diagram (Figure 1) illustrates the complete study selection process. Extracted data included authors' names, year of publication, country of study, sample characteristics, and main findings (Table 1). A comprehensive, extended version of this table is provided in the *Supplementary Table 1*.

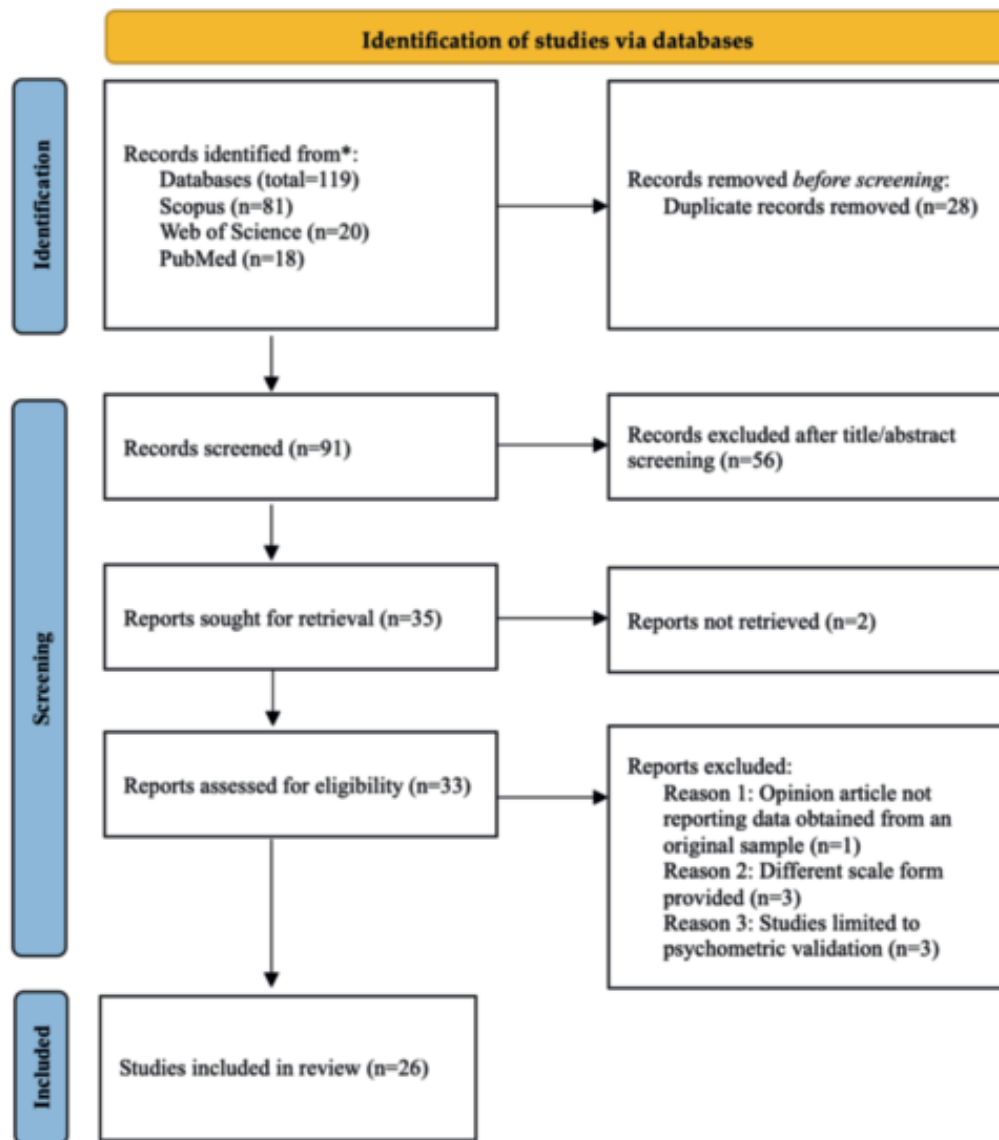


Figure 1. Prisma flow diagram.

**Table 1.** Main characteristics of the included studies.

Authors/year	Country	Sample	Main findings
Aafjes-Van Doorn <i>et al.</i> , 2021	US	441 therapists, Study 1: 105, Study 2: 336	Higher secondary traumatization and professional doubts were linked to lower mature defenses.
Békés <i>et al.</i> , 2023a	CC	1,225 above 65 years old	Anxiety, depression, and post-traumatic stress related to childhood adversity, age, and lower defensive maturity.
Békés <i>et al.</i> , 2023b	CC	19,860 community-based individuals	Distress was associated with immature defenses, while mature defenses with fewer symptoms across countries.
Carone & Tracchegiani, 2025	IT	348 mothers	Childhood maltreatment predicted maternal helplessness through defensive functioning.
Carone <i>et al.</i> , 2023a	IT	401 community-based individuals	Problematic internet use was associated with helicopter parenting and immature defensive functioning.
Carone <i>et al.</i> , 2023b	IT	436 community-based individuals	Vulnerability and anxiety were linked to immature-depressive defenses; mature defenses did not predict FoMO.
Ciocca <i>et al.</i> , 2023	IT	521 community-based individuals	Hypersexual behavior and distress were related to reduced capacity to love, mediated by immature defenses.
Cruciani <i>et al.</i> , 2025a	IT	1,565 community-based individuals	Narcissistic profiles aligned with specific defensive levels and epistemic stances.
Cruciani <i>et al.</i> , 2025b	IT	67 cardiological patients, 80 healthy individuals	Psychopathology and impaired emotional processing were associated with immature defenses in cardiological patients.
Di Giuseppe <i>et al.</i> , 2024a	IT	655 high anxiety and depression	Clustering patterns influenced by defense categories; with self-assertion and passive aggression most salient.
Di Giuseppe <i>et al.</i> , 2021a	IT	233 healthcare workers	Resilience was linked to mature defenses, whereas immature/neurotic defenses predicted stress and burnout.
Di Giuseppe <i>et al.</i> , 2022	IT	6,385 individuals	Mindfulness predicted higher defensive maturity and protected against distress.
Di Giuseppe <i>et al.</i> , 2020b	IT	5,683 individuals	Lower depression, anxiety, and post-traumatic stress were related to higher defensive functioning.
Fiorini Bincoletto <i>et al.</i> , 2025	IT	385 individuals	Psychopathology was associated with epistemic disruptions and immature defenses.
Liotti <i>et al.</i> , 2025	IT	416 community-based individuals	Epistemic trust aligned with mature defenses, while mistrust and credulity with immature/neurotic defenses.
Martino <i>et al.</i> , 2025	IT	34 severe allergic asthma, 32 hymenoptera venom anaphylaxis	Mental health and lower distress were associated with mature defenses; patients with severe allergic asthma showed higher defensive functioning.
Mechler <i>et al.</i> , 2024	SWE	181 social anxiety disorder	Guided therapy showed stronger improvements in anxiety, symptoms, and defensive functioning.
Mesce <i>et al.</i> , 2025	IT	1,006 headache, fibromyalgia, vulvodynia, comorbid conditions, and healthy controls	Higher pain-related distress and symptom severity were linked to neurotic defenses, low emotional processing, and alexithymia.
Nimbi <i>et al.</i> , 2025	IT	895 fibromyalgia, chronic headache, vulvodynia, and comorbid conditions	Three psychological profiles emerged; more impaired groups showed higher alexithymia, central sensitization, and less adaptive defenses.
Nimbi <i>et al.</i> , 2024a	IT	Fibromyalgia, Study 1: 510, Study 2: 458	Symptom severity and reduced quality of life were associated with neurotic/immature defenses.
Nimbi <i>et al.</i> , 2024b	IT	357 women with vulvodynia	Mental pain and central sensitization were predicted by immature/neurotic defenses.
Perry <i>et al.</i> , 2022	CC	6,990 individuals	Adherence to health-protective behaviors increased with mature defenses; reduced compliance with immature defenses.
Prout <i>et al.</i> , 2020	CC	2,787 individuals	Higher distress was linked to somatization and lower adaptive defenses.
Renzi & Mariani, 2025	IT	562 individuals	Maladaptive daydreaming and narcissism were inversely associated with mature defenses and positively with neurotic/immature defenses.
Tanzilli <i>et al.</i> , 2022	IT	367 individuals	Severe levels of personality pathology were predictive of poor overall defensive functioning.
Tracchegiani <i>et al.</i> , 2025	IT	1,315 community-based individuals	Childhood maltreatment predicted maladaptive defenses and impaired self/interpersonal functioning.

CC, cross-cultural; FoMO, fear of missing out; IT, Italy; SWE, Sweden; US, United States.

## Quality assessment

The methodological quality of the included studies was independently evaluated by two reviewers. For non-randomized studies, a modified version of the Newcastle-Ottawa Scale (NOS; Wells *et al.*, 2003) was applied, where higher scores indicate higher methodological quality.

The randomized controlled trial identified in the review was evaluated using the Randomized Controlled Trial of Psychotherapy Quality Rating Scale (RCT-PQRS; Kocsis *et al.*, 2010). Any discrepancies between reviewers were discussed until full agreement was achieved. Detailed results of the quality appraisal are presented in *Supplementary Tables*.

## Results

The PRISMA flow diagram provides a visual summary of the study selection process. A total of 119 records were initially identified as potentially eligible across the three databases. After removing 28 duplicates, 91 records remained for title and abstract screening. Of these, 56 were excluded because they were not pertinent to the study aim. Among the 35 full-text articles assessed for eligibility, 2 could not be retrieved, 1 was an opinion paper without original data, 3 employed different instruments, and 3 focused exclusively on the psychometric validation of the DMRS-SR-30. Ultimately, 26 studies met all inclusion criteria and were included in the final synthesis.

### Characteristics of the included studies

All included studies employed the DMRS-SR-30 to assess defense mechanisms. Among these, 23 studies adopted a cross-sectional, questionnaire-based design (Békés *et al.*, 2023a; Békés *et al.*, 2023b; Bincoletto *et al.*, 2025; Carone *et al.*, 2023a; Carone *et al.*, 2023b; Carone & Tracchegiani, 2025; Ciocca *et al.*, 2023; Cruciani *et al.*, 2025a, 2025b; Di Giuseppe *et al.*, 2020b; Di Giuseppe *et al.*, 2021; Di Giuseppe *et al.*, 2022; Di Giuseppe *et al.*, 2024a; Liotti *et al.*, 2025; Martino *et al.*, 2025; Mesce *et al.*, 2025; Nimbi *et al.*, 2024a; Nimbi *et al.*, 2024b; Nimbi *et al.*, 2025; Prout *et al.*, 2020; Renzi & Mariani, 2025; Tanzilli *et al.*, 2022; Tracchegiani *et al.*, 2025).

One study combined a cross-sectional survey with a prospective longitudinal component (Aafjes-Van Doorn *et al.*, 2021), while two others adopted a randomized controlled trial (Mechler *et al.*, 2024) and a cross-sectional design with follow-up (Perry *et al.*, 2022), respectively.

Regarding participants, two studies investigated psychotherapists and healthcare workers (Aafjes-Van Doorn *et al.*, 2021; Di Giuseppe *et al.*, 2021b); nine focused on community-based samples (Békés *et al.*, 2023b; Carone & Tracchegiani, 2025; Carone *et al.*, 2023a; Carone *et al.*, 2023b; Ciocca *et al.*, 2023; Cruciani *et al.*, 2025a; Liotti *et al.*, 2025; Perry *et al.*, 2022; Tracchegiani *et al.*, 2025); seven examined non-clinical populations (Békés *et al.*, 2023a; Bincoletto *et al.*, 2025; Di Giuseppe *et al.*, 2020b; Di Giuseppe *et al.*, 2022; Prout *et al.*, 2020; Renzi & Mariani, 2025; Tanzilli *et al.*, 2022); and eight involved clinical populations (Cruciani *et al.*, 2025b; Di Giuseppe *et al.*, 2024a; Martino *et al.*, 2025; Mechler *et al.*, 2024; Mesce *et al.*, 2025; Nimbi *et al.*, 2024a; Nimbi *et al.*, 2024b; Nimbi *et al.*, 2025).

Overall, the 26 included studies were categorized into four thematic domains according to their primary focus: medical conditions, mental health and psychopathology, personality-related

constructs, and stress-related outcomes. Six studies addressed medical conditions (Cruciani *et al.*, 2025b; Martino *et al.*, 2025; Mesce *et al.*, 2025; Nimbi *et al.*, 2024a; Nimbi *et al.*, 2024b; Nimbi *et al.*, 2025). Seven examined mental health and psychopathology (Békés *et al.*, 2023b; Bincoletto *et al.*, 2025; Carone *et al.*, 2023a; Ciocca *et al.*, 2023; Di Giuseppe *et al.*, 2024a; Liotti *et al.*, 2025; Mechler *et al.*, 2024). Three focused on personality-related constructs (Carone *et al.*, 2023b; Cruciani *et al.*, 2025a; Renzi & Mariani, 2025). Finally, ten investigated stress-related outcomes and psychological adjustment (Aafjes-Van Doorn *et al.*, 2021; Békés *et al.*, 2023a; Carone & Tracchegiani, 2025; Di Giuseppe *et al.*, 2020b; Di Giuseppe *et al.*, 2021b; Di Giuseppe *et al.*, 2022; Perry *et al.*, 2022; Prout *et al.*, 2020; Tanzilli *et al.*, 2022; Tracchegiani *et al.*, 2025).

### Medical conditions

Growing attention has been directed toward the role of defensive functioning in individuals suffering from medical conditions. In this domain, six studies examined patients with myocardial infarction, severe allergic asthma/Hymenoptera venom anaphylaxis, fibromyalgia, chronic headache, vulvodynia, and comorbid conditions.

Cruciani and colleagues (2025b) analyzed the impact of defense mechanisms and their associations with mentalization, depressive, and anxious symptoms in patients with myocardial infarction, recognized as the leading cause of mortality worldwide. Compared with healthy controls, infarcted patients exhibited higher depression and anxiety, a greater reliance on maladaptive defenses, and reduced affective mentalization. Moreover, emotional processing mediated the relationship between severe depressive and anxious symptoms and defensive functioning. These findings underscore the importance of investigating defenses in cardiological disorders, where emotional dysregulation may influence recovery and prognosis.

Martino and colleagues (2025) investigated defensive functioning in patients with severe allergic asthma and Hymenoptera venom anaphylaxis, identifying significant group differences, with higher defense scores among asthmatic patients. Considering the potentially fatal events related to these conditions and their impact on daily life, scientific attention represents an advancement. The positive association with mental health and the negative correlation with psychopathology highlighted the role of defenses as key psychological variables influencing clinical outcomes. Defensive functioning was also associated with disease type and perceived physical health, offering an evidence-based framework for individualized interventions.

With reference to fibromyalgia, chronic headache, and vulvodynia, conditions characterized by evident quality of life decrease, Mesce *et al.* (2025) identified consistent associations between neurotic defenses, pain symptoms, alexithymia, and difficulties in emotional processing. Similarly, Nimbi *et al.* (2025) conducted a cluster analysis on 895 women diagnosed with nociceptive pain, a condition providing persisting pain not originating from recognizable tissue damage, identifying three psychological profiles: a severe impairment cluster, characterized by high levels of central sensitization, elevated alexithymia, and predominantly immature and neurotic defenses; a moderate impairment cluster showing intermediate scores; and a mild impairment cluster, associated with more adaptive functioning. Fibromyalgia and comorbid conditions were more prevalent in the more compromised clusters, reinforcing the link between defensive immaturity and vulnerability to pain-related disorders.

More targeted evidence was provided by Nimbi and colleagues (2024a) in two consecutive studies involving women with fibromyalgia (Study 1:  $n=510$ ; Study 2:  $n=458$ ). Regression and path analysis showed that neurotic and immature defenses, together with mental pain and bodily threat, were strong predictors of central sensitization. In Study 1, mental pain showed the largest standardized effect, followed by low sensory threshold and neurotic defenses. In Study 2, the model explained 31.9% of the variance in central sensitization, 20.8% in psychological quality of life, and 33.1% in physical quality of life. These findings indicate that immature defenses and mental pain significantly compromise both psychological well-being and daily functioning in fibromyalgia.

In patients with vulvodynia, Nimbi and colleagues (2024b) reported that neurotic defenses were highly representative of patients' overall functioning. Immature and neurotic styles were associated with greater physical central sensitization and, indirectly, with reduced psychological and physical quality of life, explaining 30.3% and 57.1% of the variance, respectively. Specific defenses, such as intellectualization, isolation of affect, and displacement, were closely linked to central sensitization, further emphasizing the need for targeted psychological interventions in this population.

Overall, these studies encompassed a wide range of clinical populations. Despite methodological heterogeneity and the predominance of female samples, the findings consistently point to the maladaptive role of immature and neurotic defenses, with significant association across mental and physical domains. Collectively, this evidence highlights the importance of further exploring defensive functioning in medical populations, where emotion regulation processes may play a pivotal role in disease perception, symptom management, and treatment adherence.

### Stress and psychological adjustment/psychological trauma

Psychological adjustment to stress and trauma represents a major area of research, encompassing diverse mental and physical contexts. Despite the heterogeneity of these experiences, defensive functioning appears to be a stable and recognizable dimension of psychological adaptation.

Eight studies examined stress-related defensive functioning during the COVID-19 pandemic, highlighting how different defense styles influenced adaptation and psychological outcomes. Aafjes-Van Doorn *et al.* (2021) investigated therapists' responses and found that mature defenses were predominant among professionals, whereas secondary traumatization and vicarious stress were associated with immature profiles. Similarly, Békés *et al.* (2023a) reported that ODF correlated with post-traumatic stress, depression, and anxiety. More adaptive defenses predicted lower distress, and defensive functioning mediated the relationship between childhood trauma and current psychological distress.

Di Giuseppe *et al.* (2024a) extended these findings to frontline healthcare workers, showing that high stress, exhaustion, and depersonalization (burnout) were associated with immature and neurotic defenses, whereas mature defenses correlated with resilience and a sense of personal accomplishment. In the general population, Di Giuseppe *et al.* (2022) confirmed similar associations: mature defenses were linked to mindfulness and emotional regulation, reinforcing the protective role of adaptive functioning.

Earlier evidence by Di Giuseppe *et al.* (2020b) had already demonstrated strong associations between mature defenses, lower anxiety and depression, and reduced post-traumatic stress, while

immature defenses were consistently related to greater affective distress and maladjustment. Prout *et al.* (2020) further showed that psychopathology and distress were linked to somatization and maladaptive defenses, highlighting these mechanisms as potential targets for intervention. Tanzilli *et al.* (2022) confirmed that immature profiles predicted maladaptive stress reactions and were strongly connected to personality pathology.

Within this broader framework, Perry *et al.* (2022) explored behavioral outcomes, demonstrating that defensive style, together with contextual factors (locally mandated restrictions) and personal variables (pandemic-related fears, age, domestic stressors, emotional support), significantly predicted adherence to health-protective behaviors. These behaviors, in turn, predicted vaccination uptake, underscoring the clinical and public health relevance of defenses in contexts of collective stress and crisis adaptation.

Two studies specifically focused on the role of defenses in early life adversity. Tracchegiani *et al.* (2025) found that childhood maltreatment and impairments in self and interpersonal functioning were closely related to defensive patterns. The predominance of immature and avoidant defenses was linked to marked disruptions in personality functioning, with large effect sizes for emotional abuse ( $d=2.73$ ), emotional neglect ( $d=2.41$ ), and physical neglect ( $d=2.24$ ). Carone and Tracchegiani (2025) extended this evidence to maternal caregiving, showing that maternal histories of emotional or sexual abuse and neglect were associated with higher maternal helplessness. Crucially, ODF mediated the relationship between childhood emotional abuse and maternal helplessness ( $\beta=0.06$ ,  $p=.019$ ), and the full model explained 28% of the variance, highlighting the role of defenses in shaping maladaptive caregiving responses.

Taken together, these findings demonstrate that stress-related outcomes are strongly influenced by immature and neurotic defenses, whereas mature defensive functioning consistently predicts better adaptation, psychological resilience, and well-being. The evidence reinforces the conceptualization of defenses as a core transdiagnostic mechanism linking emotion regulation, stress response, and treatment adherence across both individual and collective levels of functioning.

### Mental health and psychopathology

Seven studies explored the relationship between defense mechanisms, mental health, and psychopathology.

Using a large cross-national dataset from six countries, Békés *et al.* (2023b) investigated cross-cultural patterns of defensive functioning and their associations with psychological distress, also due to the pandemic and related restrictions. Defensive profiles were highly consistent across countries, indicating that the deployment of defenses is largely stable and resistant to cultural variability. On average, mature defenses were the most frequently reported (41-56%), followed by immature (25-36%) and neurotic defenses (19-24%). Distress was associated with immature and neurotic defenses (median  $r=0.27$  for immature, median  $r=0.33$  for neurotic), while mature defenses were significantly and negatively related to psychopathology (median  $r=-0.37$ ). Within the immature category, depressive defenses were particularly associated with higher levels of depression and anxiety (median  $r=0.27$ ). These findings confirm the protective role of mature defenses and a remarkable cross-cultural uniformity in defensive functioning.

Bincoletto *et al.* (2025) examined epistemic trust, defined as the capability to consider interpersonally transmitted knowledge (trustworthy) as generalizable or relevant to oneself, interpersonal problems, symptomatology, and defenses in a non-clinical sample.

Immature and image-distorting defenses clustered with epistemic mistrust, whereas ODF and mature defenses were inversely related to epistemic disruption. Immature defensive functioning also predicted higher symptomatology ( $\beta=-0.51$ , standard error [SE]=0.09,  $p<.001$ ), indicating that lower coherence in defensive functioning constitutes a risk factor for psychopathological symptoms. Similarly, Liotti *et al.* (2025) analyzed defensive profiles in relation to epistemic trust, mistrust, and credulity among 416 participants. High epistemic trust correlated with mature defenses, such as sublimation and self-observation, and with affiliative behaviors, whereas epistemic mistrust correlated with neurotic and immature defenses, including projection, passive aggression, and splitting of self-image. Epistemic credulity showed a mixed profile characterized by displacement and reaction formation. These results demonstrate that distinct defensive patterns are linked to epistemic stances, influencing both intrapersonal and interpersonal functioning.

In the domain of behavioral addictions (*sine substantia*), Carone *et al.* (2023a) identified defensive functioning as a key variable in problematic internet use, revealing strong associations with parenting styles and immature defenses. Higher problematic internet use was linked to lower mature defensive functioning ( $r=-.319$ ,  $p<.001$ ), with the model explaining 15% of the variance ( $p<.001$ ). In a related study, Ciocca *et al.* (2023) found that limitations in the capacity to love were mediated by immature defenses, which significantly predicted hypersexual behaviors ( $\beta=0.190$ ,  $p=.02$ ) and contributed to psychological distress. Collectively, these findings suggest that immature defenses mediate the relationship between relational dysfunctions and psychopathology, underscoring their central role in emotional and interpersonal maladjustment.

Di Giuseppe *et al.* (2024a) demonstrated that self-assertion plays a fundamental role in both anxiety and depression, while passive aggression showed multiple interrelations with other defenses. Clusters of specific mechanisms contributed differentially to anxiety and depression, revealing distinct structural roles within defensive organization. Finally, Mechler *et al.* (2024) reported that guided internet-based psychodynamic therapy for adults with social anxiety disorder led to substantial improvements in defensive functioning (effect size=0.60 *vs.* waitlist), accompanied by large reductions in social anxiety ( $d=1.07$ ) and depressive symptoms ( $d=0.85$ ). These outcomes highlight the plasticity of defensive functioning and its relevance as a target for psychotherapeutic change.

Overall, defenses emerged as critical determinants of psychological functioning. Immature and neurotic defenses were consistently associated with greater psychopathology and reduced adaptive functioning, whereas mature defenses demonstrated a protective role in maintaining emotional balance and promoting resilience.

## Personality

Three studies examined the relationship between defense mechanisms and personality functioning, a long-standing area of research with high clinical relevance. Defenses play a crucial role in the development, organization, and maintenance of personality structure, influencing both adaptive and maladaptive traits.

Carone *et al.* (2023b) deepened the understanding of the associations among defenses, grandiose and vulnerable narcissism, and fear of missing out, defined as incessant unease deriving from the belief of being excluded from rewarding occasions experienced by others, followed by a need for constant information.

Their results showed that higher levels of immature and depressive defenses were linked to greater personality maladjustment, frustration, and vulnerability. Narcissism emerged as a central construct, mediating the relationship between maladaptive defenses and emotional instability. Grandiose narcissism and immature-depressive defense patterns represent intervention targets, especially in subjects struggling with fear of missing out. In fact, fear of exclusion and greater attention to others' possible or imaginary advantages could represent dynamics perpetually affecting personality organization, leading to continuous inner frustration and maladaptive experience.

In line with these findings, Cruciani *et al.* (2025a) highlighted a strong convergence between immature defenses, epistemic stances, and narcissistic profiles, underscoring the intertwined nature of defensive functioning and self-structure. Thus, grandiose narcissism was more closely associated with adaptive defenses than vulnerable narcissism. Data explain how individuals scoring higher in grandiose narcissism apparently adapt more easily. However, it was also linked to neurotic and immature defenses. Considering epistemic stances as close to mentalization, secure attachment and adaptive personality, the inverse direction assumed by personality disorders and disruptions in epistemic trust appeared based. Data support an evidence-based understanding of narcissistic dynamics as expressions of underlying defensive organization.

Conversely, Renzi and Mariani (2025) reported negative associations between mature defenses and both maladaptive daydreaming and narcissism, confirming that immature and neurotic defenses strongly shape maladaptive personality configurations, while mature defenses serve as protective factors.

Overall, evidence indicates that mature defensive functioning is consistently associated with adaptive personality organization and psychological resilience, whereas immature and neurotic defenses mark vulnerability, rigidity, and maladaptive personality expression.

## Discussion

Defense mechanisms are psychological processes of great clinical relevance. Their role in psychological adaptation, personality development, and the occurrence and maintenance of symptoms makes them an essential construct for understanding mental functioning. Given the inherently interpersonal nature of many defenses, the systematic investigation of defensive functioning in clinical contexts, including psychotherapy, is crucial (Di Giuseppe *et al.*, 2024b; Gelo *et al.*, 2016; Salvatore *et al.*, 2009). Both patients' and therapists' defenses influence the therapeutic process as significantly as other relational variables and should therefore be regarded as potential targets for therapeutic intervention and clinical training (Messina *et al.*, 2018).

Reliable and valid instruments are essential for the empirical assessment of defenses. Among these, the DMRS-SR-30 emerges as a particularly suitable tool, allowing a rapid yet comprehensive evaluation of the main defenses used by individuals. Its standardized structure permits comparison across domains relevant to psychological and physical functioning, thus integrating empirical research and clinical practice.

The present review highlights that available evidence already provides robust support for the psychometric soundness of the DMRS-SR-30 and for its capacity to capture meaningful aspects of psychological functioning. Specifically, immature defenses were consistently associated with maladjustment and psy-

chological or physical suffering, whereas mature defenses were linked to psychological health, physical well-being, and adaptive functioning.

In the domain of medical conditions, the reviewed literature supports the external validity of the scale through comparisons and convergence with other psychometric tools. The contribution by Cruciani *et al.* (2025b) on patients with myocardial infarction aligns with previous research exploring defenses in cardiological populations (Boogar *et al.*, 2017; Fukunishi *et al.*, 1994; Korkmaz *et al.*, 2022; Peglar & Borgen, 1984; Ríos Martínez *et al.*, 2010). Regarding asthma and Hymenoptera venom anaphylaxis, only a limited number of studies have directly examined defenses (Ameri *et al.*, 2014; Yellowlees & Ruffin, 1989; Ricciardi *et al.*, 2023), although valuable evidence has addressed related psychosomatic and emotional aspects (Galletti *et al.*, 2020; Giorgianni *et al.*, 2024; Griffiths *et al.*, 2021; Kotsiou *et al.*, 2025; Martino *et al.*, 2024; Oliverio *et al.*, 2022; Plaza-González *et al.*, 2022; Ricciardi *et al.*, 2023; Ricciardi *et al.*, 2024; Silvestro *et al.*, 2023; Ye *et al.*, 2021). Within this context, Martino *et al.* (2025) provide novel evidence supporting the relevance of defensive functioning in allergic and anaphylactic conditions.

The study of defenses in nociplastic pain represents another emerging area of interest. The evidence collected in this review outlines a coherent framework: mature defenses appear protective and adaptive (Nimbi *et al.*, 2024), whereas immature and neurotic defenses, in interaction with alexithymia and mental pain, contribute to central sensitization and reduced well-being (Mesce *et al.*, 2025; Nimbi *et al.*, 2024a; Nimbi *et al.*, 2024b; Nimbi *et al.*, 2025). The co-occurrence of alexithymia and maladaptive defenses may reflect an interaction whereby affective processing deficits reduce the flexibility and effectiveness of emotional regulation strategies. Difficulties in identifying, expressing, and recognizing emotions, core aspects of alexithymia, have long been recognized as critical determinants of psychological and physical health (Aaron *et al.*, 2019; Di Tella *et al.*, 2016; Gangemi *et al.*, 2021; Lumley *et al.*, 1996; Merlo *et al.*, 2024a; Merlo *et al.*, 2024b). This interactional perspective offers a conceptual framework for understanding how deficits in emotional processing and defensive style jointly contribute to transdiagnostic vulnerability in chronic conditions (Di Giuseppe, 2024).

In the field of mental health and psychopathology, defenses emerged as key determinants of clinical outcomes. The cross-cultural consistency observed by Békés *et al.* (2023) demonstrated a stable defensive hierarchy across different sociocultural contexts, with mature defenses systematically associated with reduced distress and greater well-being. Findings from both patients and clinicians further highlight the significance of defensive functioning for interpersonal problems, emotion regulation, and psychosocial adjustment (Bincoletto *et al.*, 2025; Carone *et al.*, 2023a; Di Giuseppe *et al.*, 2024b; Mechler *et al.*, 2024). The structure and maturity of defensive functioning provide a nuanced framework for interpreting psychopathological profiles, including psychotic and neurotic configurations, personality organization, and specific expressions such as depressive defenses. The available literature, both past and contemporary, consistently underscores the clinical importance of assessing defenses as a guide for diagnostic formulation and psychotherapeutic planning (Barth *et al.*, 2025; Bond *et al.*, 2004; Cramer, 2015b; Gordon & Brackney, 1979; Mrozowicz-Wrońska, 2023; Nickel & Egle, 2006; Silverman & Doorn, 2023; Silvestro *et al.*, 2025; Vaillant, 1994).

The link between personality organization and defensive functioning was also consistently supported. Dysfunctional personality traits, particularly grandiose and vulnerable narcissism,

were associated with immature defenses (Carone *et al.*, 2023b; Cruciani *et al.*, 2025a; Renzi & Mariani, 2025). These patterns reflect maladjustment and vulnerability to psychopathology. Data derived from the DMRS-SR-30 confirm the continuity between personality structures and defensive organization, supporting theoretical models that conceptualize narcissistic personality features as manifestations of underlying defensive dynamics (Beomonte Zobel *et al.*, 2021; Blanco *et al.*, 2023; Chen, 2024; Cramer, 2015b; Hong, 2025; Kampe *et al.*, 2021; Silverman & Doorn, 2023; Somma *et al.*, 2024).

Concerning stress and psychological adjustment, defensive functioning emerged as a key moderator of responses to adverse events. During the COVID-19 pandemic, several studies documented close associations between defense patterns and situational stress. Aafjes-Van Doorn *et al.* (2021) showed that immature and neurotic defenses promoted secondary traumatization among therapists, whereas mature defenses were protective. Consistent results were reported for burnout and post-traumatic stress in healthcare workers (Di Giuseppe *et al.*, 2020b; Di Giuseppe *et al.*, 2022; Di Giuseppe *et al.*, 2024a). Immature defenses were also linked to maladaptive reactions and psychopathology in both clinical and non-clinical populations (Prout *et al.*, 2020; Tanzilli *et al.*, 2022; Tracchegiani *et al.*, 2025). Complementing these findings, research on early-life adversity demonstrated that childhood maltreatment and impaired caregiving experiences contribute to the persistence of immature defenses, with significant implications for self- and interpersonal functioning (Carone & Tracchegiani, 2025; Tracchegiani *et al.*, 2025). These results converge with broader literature addressing the developmental impact of stressors on psychopathology (Malfanti *et al.*, 2025; Rnic *et al.*, 2023; Sesar *et al.*, 2022; Teixeira *et al.*, 2022).

In summary, findings from this systematic review confirm that defense mechanisms are deeply intertwined with both psychological and physical health. The four main domains investigated – medical conditions, mental health and psychopathology, personality, and stress-related adjustment – collectively demonstrate that immature and neurotic defenses contribute to maladaptive outcomes, whereas mature defenses promote adaptive functioning, emotional balance, and resilience. Personality, organization and stress response appear particularly sensitive to defensive style, influencing the onset and course of conditions such as anxiety, depression, and somatization.

Nevertheless, across all included studies, a consistent pattern emerged: immature and neurotic defenses were systematically linked to maladjustment, while mature defenses corresponded to well-being and psychological stability. This convergence provides a solid, epistemologically grounded empirical basis for future clinical applications. Importantly, the systematic assessment of defensive functioning may offer specific, evidence-based targets for intervention, facilitating the development of personalized psychotherapeutic strategies that address the underlying mechanisms of psychological maladjustment.

## Limitations

Despite strengths, some limitations must be acknowledged. Most included studies were observational, with only one randomized controlled trial, and primarily employed non-probabilistic samples, limiting the generalizability of results. The evidence synthesized in this review is predominantly based on Italian samples (20 out of 26 studies). This distribution, also influenced by the fact that the instrument considered is very recent,

reflects a particularly active line of research within the Italian context and provides coherent insights within a shared cultural and clinical framework. Nonetheless, such homogeneity also represents a limitation for the generalizability of the findings. Cultural differences in psychological functioning, illness perception, and access to healthcare may influence key variables under investigation, and the extent to which these dynamics operate similarly in other populations remains uncertain. Future research should prioritize cross-cultural investigations to validate the observed associations internationally. Furthermore, the recent development of the DMRS-SR-30 underscores the need for continued validation, replication, and longitudinal research to consolidate its empirical foundations.

## Conclusions

The findings of this systematic review underscore the central role of defensive functioning as a transdiagnostic regulatory process that integrates psychological and physical dimensions of health and adaptation. Across diverse populations and diagnostic categories, defense mechanisms emerged as fundamental regulators of emotion processing, personality organization, and adaptive capacity. Understanding an individual's defensive style provides a unifying framework for linking psychological adjustment, personality structure, and health-related outcomes, supporting an integrative view of mind-body interactions.

Clinically, these findings emphasize the importance of systematically assessing defenses as a complement to traditional diagnostic procedures. Incorporating the evaluation of defensive functioning into psychodiagnostic, psychotherapeutic, and medical settings can enhance the holistic understanding of the patient, offering valuable insights into emotional adaptation, resilience, and coping with illness. When integrated with standard clinical assessments, defensive functioning can help guide individualized treatment planning, monitor therapeutic progress, and identify patterns that influence compliance, adherence, and overall outcome.

Within this perspective, the Defense Mechanisms Rating Scales-Self-Report-30 (DMRS-SR-30) represents a reliable, theory-driven, and time-efficient instrument that operationalizes complex psychodynamic constructs into measurable dimensions. Its demonstrated validity and cross-domain applicability make it a promising tool for bridging empirical research, psychological assessment, and clinical medicine.

Future research should further explore the predictive and clinical utility of the DMRS-SR-30, testing its sensitivity to change, longitudinal stability, and capacity to capture the evolution of defensive functioning throughout psychotherapy and medical treatment. In this sense, the instrument holds significant potential to become an integral component of evidence-based, person-centered care, advancing the integration of psychodynamic concepts into the comprehensive evaluation and treatment of mind-body health conditions.

## References

- Aafjes-Van Doorn, K., Békés, V., Luo, X., Prout, T. A., & Hoffman, L. (2021). What do therapist defense mechanisms have to do with their experience of professional self-doubt and vicarious trauma during the COVID-19 pandemic? *Frontiers in Psychology, 12*, 647503. doi: 10.3389/fpsyg.2021.647503.
- Aaron, R. V., Fisher, E. A., De La Vega, R., Lumley, M. A., & Palermo, T. M. (2019). Alexithymia in individuals with chronic pain and its relation to pain intensity, physical interference, depression, and anxiety: a systematic review and meta-analysis. *Pain, 160*(5), 994-1006. doi: 10.1097/j.pain.0000000000001487.
- Ameri, F., Bayat, B., & Zohreh, K. (2014). Comparison of early maladaptive schemas and defense styles in asthmatic, alexithymic and normal subjects. *Practice in Clinical Psychology, 2*(1), 51-57. <http://jpcp.uswr.ac.ir/article-1-164-en.html>.
- American Psychiatric Association (2013). *Diagnostic and Statistical Manual of Mental Disorders*, 5th Edn. Washington, DC: American Psychiatric Publishing.
- American Psychiatric Association (1994). *Diagnostic and statistical manual of mental disorders* (4th ed.). American Psychiatric Publishing, Inc.
- Barros, A. J., Teche, S. P., Padoan, C., Laskoski, P., Hauck, S., & Eizirik, C. L. (2020). Countertransference, defense mechanisms, and vicarious trauma in work with sexual offenders. *Journal of the American Academy of Psychiatry and the Law, 48*(3), 302-314. doi: 10.29158/JAAPL.003925-20.
- Barth, L., Ruettner, B., Rischmüller, M., & Mueller-Alcazar, A. (2025). Defense mechanisms and their conceptualization in psychometric testing. *International Journal of Psychology Sciences, 7*(1), 166-178. doi: 10.33545/26648377.2025.v7.i1b.91.
- Békés, V., Prout, T. A., Di Giuseppe, M., Wildes Ammar, L., Kui, T., Arseno, G., & Conversano, C. (2021). Initial validation of the Defense Mechanisms Rating Scales Q-sort: A comparison of trained and untrained raters. *Mediterranean Journal of Clinical Psychology, 9*(2). doi: 10.13129/2282-1619/mjcp-3107
- Békés, V., Starrs, C. J., & Perry, J. C. (2023a). The COVID-19 pandemic as traumatic stressor: Distress in older adults is predicted by childhood trauma and mitigated by defensive functioning. *Psychological Trauma: Theory, Research, Practice, and Policy, 15*(3), 449. doi: 10.1037/tra0001253
- Békés, V., Starrs, C. J., Perry, J. C., Prout, T. A., Conversano, C., & Di Giuseppe, M. (2023b). Defense mechanisms are associated with mental health symptoms across six countries. *Research in Psychotherapy: Psychopathology, Process, and Outcome, 26*(3), 729. doi: 10.4081/ripppo.2023.729.
- Beomonte Zobel, S., Rossetti, R., Rogier, G., & Velotti, P. (2021). On the Road Leading to Non-Suicidal Self-Injury: Brief Report on Narcissistic Vulnerability and Shame. *Mediterranean Journal of Clinical Psychology, 9*(1). doi: 10.6092/2282-1619/mjcp-2853.
- Bincoletto, A. F., Liotti, M., Di Giuseppe, M., Fiorentino, F., Nimbi, F. M., Lingiardi, V., & Tanzilli, A. (2025). The interplay of epistemic trust, defensive mechanisms, interpersonal problems, and symptomatology: An empirical investigation. *Personality and Individual Differences, 233*, 112893. doi: 10.1016/j.paid.2024.112893.
- Blanco, C., Kampe, L., Wall, M. M., Liu, S. M., Wang, S., Caligor, E., & Olfson, M. (2023). Approximating defense mechanisms in a national study of adults: prevalence and correlates with functioning. *Translational Psychiatry, 13*(1), 21. doi: 10.1038/s41398-022-02303-3.
- Boldrini, T., Tanzilli, A., Di Cecilia, G., Gualco, I., Lingiardi, V., Salcuni, S., Tata, M. C., Vicari, S., & Pontillo, M. (2020). Personality Traits and Disorders in Adolescents at Clinical High Risk for Psychosis: Toward a Clinically Meaningful Diagnosis. *Frontiers in Psychiatry, 11*, 562835. doi: 10.3389/fpsy.2020.562835

- Bond, M. (2004). Empirical studies of defense style: Relationships with psychopathology and change. *Harvard Review of Psychiatry, 12*(5), 263-278. doi: 10.1080/10673220490886167.
- Bond, M., Gardner, S. T., Christian, J., & Sigal, J. J. (1983). Empirical study of self-rated defense styles. *Archives of General Psychiatry, 40*(3), 333-338. doi: 10.1001/archpsyc.1983.01790030103013.
- Boogar, I. R., Rezaei, A., & Mohamadpoor, S. (2017). Quality of life in coronary heart disease patients: The role of defense mechanisms and alexithymia with mediation of psychological distress. *Iranian Journal of Psychiatry and Behavioral Sciences, 11*(3), 67-85. doi: 10.5812/ijpbs.8567.
- Brenner, C. (1981). Defense and defense mechanisms. *The Psychoanalytic Quarterly, 50*(4), 557-569. doi: 10.1080/21674086.1981.11926971.
- Carone, N., & Tracchegiani, J. (2025). Childhood maltreatment in maternal helpless caregiving: The mediating role of defensive functioning. *Journal of Family Trauma, Child Custody & Child Development, 22*(1), 157-178. doi: 10.1080/26904586.2024.2434855.
- Carone, N., Benzi, I. M. A., Muzi, L., Parolin, L. A. L., & Fontana, A. (2023a). Problematic internet use in emerging adulthood to escape from maternal helicopter parenting: defensive functioning as a mediating mechanism. *Research in Psychotherapy: Psychopathology, Process, and Outcome, 26*(3), 693. doi: 10.4081/ripppo.2023.693.
- Carone, N., Benzi, I. M. A., Parolin, L. A. L., & Fontana, A. (2023b). "I can't miss a thing"-The contribution of defense mechanisms, grandiose narcissism, and vulnerable narcissism to fear of missing out in emerging adulthood. *Personality and Individual Differences, 214*, 112333. doi: 10.1016/j.paid.2023.112333.
- Chen, R. (2024). Narcissistic personality disorder: a general review. In *SHS Web of Conferences* (Vol. 193, p. 03012). EDP Sciences. doi: 10.1051/shsconf/202419303012.
- Ciocca, G., Origlia, G., Limoncin, E., Mollaioli, D., Tanzilli, A., Lingiardi, V., & Jannini, E. A. (2023). Capacity to love and problematic sexuality: the role of defense mechanisms and psychopathological suffering. *The Journal of Sexual Medicine, 20*(7), 1018-1024. doi: 10.1093/jsxmed/qdad066.
- Cramer, P. (1991). "The defense mechanism manual," in *The Development of Defense Mechanisms*. New York, NY: Springer. doi: 10.1007/978-1-4613-9025-1\_12.
- Cramer, P. (1998). Coping and defense mechanisms: What's the difference? *Journal of Personality, 66*(6), 919-946. doi: 10.1111/1467-6494.00037.
- Cramer, P. (2012). *The development of defense mechanisms: Theory, research, and assessment*. Springer doi: 10.1007/978-1-4613-9025-1.
- Cramer, P. (2015a). Defense mechanisms: 40 years of empirical research. *Journal of Personality Assessment, 97*(2), 114-122. doi: 10.1080/00223891.2014.947997.
- Cramer, P. (2015b). Understanding defense mechanisms. *Psychodynamic Psychiatry, 43*(4), 523-552. doi: 10.1521/pdps.2015.43.4.523.
- Cruciani, G., Fontana, A., Benzi, I. M. A., Cacioppo, M., Muzi, L., Parolin, L., Tracchegiani, J., & Carone, N. (2025a). Defensive levels in narcissistic profiles: associations with epistemic trust, mistrust, and credulity in emerging adulthood. *Current Psychology, 44*(11), 10140-10152. doi: 10.1007/s12144-025-07850-8.
- Cruciani, G., Lo Buglio, G., Tanzilli, A., Liotti, M., Scalzeri, M., Tanzilli, G., Galli, F., & Lingiardi, V. (2025b). Depressive and Anxiety Symptoms, Defense Mechanisms, and Mentalized Affectivity in Individuals with Myocardial Infarction: An Empirical Investigation. *Behavioral Sciences, 15*(4), 528. doi: 10.3390/bs15040528.
- Di Giuseppe, M. (2024). Transtheoretical, transdiagnostic, and empirical-based understanding of defense mechanisms. *Mediterranean Journal of Clinical Psychology 12*(1). doi: 10.13129/2282-1619/mjcp-4036
- Di Giuseppe, M., Aafjes-van Doorn, K., Békés, V., Gorman, B.S., Stukenberg, K. & Waldron, S., (2024a). Therapists' defense use impacts their patients' defensive functioning: a systematic case study. *Research in Psychotherapy: Psychopathology, Process and Outcome, 27*(2), 797. doi: 10.4081/ripppo.2024.797
- Di Giuseppe, M., & Perry, J. C. (2021). The hierarchy of defense mechanisms: assessing defensive functioning with the defense mechanisms rating scales Q-sort. *Frontiers in Psychology, 12*, 718440. doi: 10.3389/fpsyg.2021.718440.
- Di Giuseppe, M., Lo Buglio, G., Cerasti, E., Boldrini, T., Conversano, C., Lingiardi, V., & Tanzilli, A. (2024b). Defense mechanisms in individuals with depressive and anxiety symptoms: a network analysis. *Frontiers in Psychology, 15*. doi: 10.3389/fpsyg.2024.1465164.
- Di Giuseppe, M., Nepa, G., Prout, T. A., Albertini, F., Marcelli, S., Orrù, G., & Conversano, C. (2021b). Stress, burnout, and resilience among healthcare workers during the COVID-19 emergency: the role of defense mechanisms. *International Journal of Environmental Research and Public Health, 18*(10), 5258. doi: 10.3390/ijerph18105258.
- Di Giuseppe, M., Orrù, G., Gemignani, A., Ciacchini, R., Miniati, M., & Conversano, C. (2022). Mindfulness and defense mechanisms as explicit and implicit emotion regulation strategies against psychological distress during massive catastrophic events. *International Journal of Environmental Research and Public Health, 19*(19), 12690. doi: 10.3390/ijerph191912690.
- Di Giuseppe, M., Perry, J. C., Lucchesi, M., Michelini, M., Vitiello, S., Piantanida, A., Fabiani, M., Maffei, S., & Conversano, C. (2020a). Preliminary reliability and validity of the DMRS-SR-30, a novel self-report measure based on the defense mechanisms rating scales. *Frontiers in Psychiatry, 11*, 870. doi: 10.3389/fpsyg.2020.00870.
- Di Giuseppe, M., Perry, J. C., Prout, T. A., & Conversano, C. (2021a). Recent empirical research and methodologies in defense mechanisms: Defenses as fundamental contributors to adaptation. *Frontiers in Psychology, 12*, 802602. doi: 10.3389/fpsyg.2021.802602.
- Di Giuseppe, M., Zilcha-Mano, S., Prout, T. A., Perry, J. C., Orrù, G., & Conversano, C. (2020b). Psychological impact of coronavirus disease 2019 among Italians during the first week of lockdown. *Frontiers in Psychiatry, 11*, 576597. doi: 10.3389/fpsyg.2020.576597.
- Di Tella, M., & Castelli, L. (2016). Alexithymia in chronic pain disorders. *Current Rheumatology Reports, 18*(7), 41. doi: 10.1007/s11926-016-0592-x.
- Drapeau, M., De Roten, Y., Perry, J. C., & Despland, J. N. (2003). A study of stability and change in defense mechanisms during a brief psychodynamic investigation. *The Journal of Nervous and Mental Disease, 191*(8), 496-502. doi: 10.1097/01.nmd.0000082210.76762.ec.
- Fiorentino, F., Lo Buglio, G., Morelli, M., Chirumbolo, A., Di Giuseppe, M., Lingiardi, V., & Tanzilli, A. (2024). Defensive functioning in individuals with depressive disorders: A sys-

- tematic review and meta-analysis. *Journal of Affective Disorders*, 357, 42-50. doi: 10.1016/j.jad.2024.04.091
- Freud, S. (1894). "The neuro-psychoses of defence," in *The Standard Edition of the Complete Psychological Works of Sigmund Freud*, ed J. Strachey (London: Hogarth Press), 41-61.
- Fukunishi, I., Numata, Y., & Hattori, M. (1994). Alexithymia and defense mechanisms in myocardial infarction. *Psychological Reports*, 75(1), 219-223. doi: 10.2466/pr0.1994.75.1.219.
- Galletti, B., Freni, F., Meduri, A., Oliverio, G. W., Signorino, G. A., Perroni, P., Galletti, C., Aragona, P., & Galletti, F. (2020). Rhino-orbito-cerebral mucormycosis in diabetic disease. *Journal of Craniofacial Surgery*, 31(3), e321-e324. doi: 10.1097/SCS.00000000000006191.
- Gangemi, S., Ricciardi, L., Caputo, A., Giorgianni, C., Furci, F., Spatari, G., & Martino, G. (2021). Alexithymia in an unconventional sample of Forestry Officers: a clinical psychological study with surprising results. *Mediterranean Journal of Clinical Psychology*, 9(3). doi: 10.13129/2282-1619/mjcp-3245.
- Gelo, O. C. G., Ziglio, R., Armenio, S., Fattori, F., & Pozzi, M. (2016). Social representation of therapeutic relationship among cognitive-behavioral psychotherapists. *Journal of Counseling Psychology*, 63(1), 42-56. doi: 10.1037/cou0000104
- Giorgianni, C. M., Martino, G., Brunetto, S., Buta, F., Lund-Jacobsen, T., Tonacci, A., Gangemi, S., & Ricciardi, L. (2024). Allergic Sensitization and Psychosomatic Involvement in Outdoor and Indoor Workers: A Preliminary and Explorative Survey of Motorway Toll Collectors and Office Employees. *Healthcare*, 12(14), 1429. doi: 10.3390/healthcare12141429.
- Gleser, G. C., & Ihilevich, D. (1969). An objective instrument for measuring defense mechanisms. *Journal of Consulting and Clinical Psychology*, 33(1), 51. doi: 10.1037/h0027381.
- Gleser, G., & Sacks, M. (1973). Ego defenses and reaction to stress: A validation study of the Defense Mechanisms Inventory. *Journal of Consulting and Clinical Psychology*, 40(2), 181. doi: 10.1037/h0034487.
- Gordon, N. G., & Brackney, B. E. (1979). Defense mechanism preference and dimensions of psychopathology. *Psychological Reports*, 44(1), 188-190. doi: 10.2466/pr0.1979.44.1.188.
- Griffiths, D., Giancola, L. M., Welsh, K., MacGlashing, K., Thayer, C., Gunnlaugsson, S., Stamatiadis, N. P., Sierra, G. C., Hammond, A., Greco, K. F., Simoneau, T., Baxi, S. N., & Gaffin, J. M. (2021). Asthma control and psychological health in pediatric severe asthma. *Pediatric Pulmonology*, 56(1), 42-48. doi: 10.1002/ppul.25120.
- Gyurak, A., Gross, J. J., & Etkin, A. (2011). Explicit and implicit emotion regulation: a dual-process framework. *Cognition & Emotion*, 25(3), 400-412. doi: 10.1080/02699931.2010.544160
- Halevi, E., & Idisis, Y. (2018). Who helps the helper? Differentiation of self as an indicator for resisting vicarious traumatization. *Psychological Trauma: Theory, Research, Practice, and Policy*, 10(6), 698. doi: 10.1037/tra0000318.
- Hilsenroth, M. J., Callahan, K. L., & Eudell, E. M. (2003). Further reliability, convergent and discriminant validity of overall defensive functioning. *The Journal of Nervous and Mental Disease*, 191(11), 730-737. doi: 10.1097/01.nmd.0000095125.92493.e8.
- Høglend, P., & Perry, J. C. (1998). Defensive functioning predicts improvement in major depressive episodes. *The Journal of Nervous and Mental Disease*, 186(4), 238-243. doi: 10.1097/00005053-199804000-00006.
- Hong, C. (2025). Defense Mechanisms. In *The ECPH Encyclopedia of Psychology* (pp. 371-372). Singapore: Springer Nature Singapore. doi: 10.1007/978-981-97-7874-4\_290
- Kocsis, J. H., Gerber, A. J., Milrod, B., Roose, S. P., Barber, J., Thase, M. E., & Leon, A. C. (2010). A new scale for assessing the quality of randomized clinical trials of psychotherapy. *Comprehensive Psychiatry*, 51(3), 319-324. doi: 10.1016/j.comppsy.2009.07.001
- Kampe, L., Bohn, J., Remmers, C., & Hörz-Sagstetter, S. (2021). It's not that great anymore: The central role of defense mechanisms in grandiose and vulnerable narcissism. *Frontiers in Psychiatry*, 12, 661948. doi: 10.3389/fpsy.2021.661948
- Korkmaz, H., Karasu, M., Ateşçelik, M., Özsoy, F., & Korkmaz, S. (2022). The relationship between defence mechanisms and clinical variables in myocardial infarction patients. *Archives of Medical Sciences. Atherosclerotic Diseases*, 7, e136. doi: 10.5114/amsad/154594
- Kotsiou, O. S., Barkas, G. I., Kokkinidou, K., Siachpazidou, D. I., Gourgoulianis, K. I., & Daniil, Z. (2025). Psychopathology in asthma patients: analysis of demographic and clinical associations. *Journal of Asthma*, 62(2), 290-302. doi: 10.1080/02770903.2024.2400601
- Lerner, P. M. (2005). "Defense and its assessment: the lerner defense scale," in *Scoring the Rorschach: Seven Validated Systems*, eds R. F. Bornstein and J. M. Masling (Mahwah, NJ: Lawrence Erlbaum Associates Publishers), 237-269.
- Leung, T., Schmidt, F., & Mushquash, C. (2023). A personal history of trauma and experience of secondary traumatic stress, vicarious trauma, and burnout in mental health workers: A systematic literature review. *Psychological Trauma: Theory, Research, Practice, and Policy*, 15(S2), S213. doi: 10.1037/tra0001277
- Liberati, A., Altman, D. G., Tetzlaff, J., Mulrow, C., Gøtzsche, P. C., Ioannidis, J. P., Clarke, M., Devereaux, P. J., Kleijnen, J., & Moher, D. (2009). The PRISMA statement for reporting systematic reviews and meta-analyses of studies that evaluate healthcare interventions: explanation and elaboration. *British Medical Journal*, 339. doi: 10.1136/bmj.b2700
- Lingiardi, V., Gazzillo, F., Colli, A., De Bei, F., Tanzilli, A., Di Giuseppe, M., Nardelli, N., Caristo, C., Condino, V., Gentile, D., & Dazzi, N. (2010). Diagnosis and assessment of personality, therapeutic alliance and clinical exchange in psychotherapy research. *Research in Psychotherapy: Psychopathology, Process and Outcome*, 2, 97-124. doi: 10.4081/ripppo.2010.36
- Lingiardi, V., & McWilliams, N. (Eds.). (2017). *Psychodynamic diagnostic manual: PDM-2* (2nd ed.). The Guilford Press.
- Lingiardi, V., Lonati, C., Delucchi, F., Fossati, A., Vanzulli, L., & Maffei, C. (1999). Defense mechanisms and personality disorders. *The Journal of Nervous and Mental Disease*, 187(4), 224-228. doi: 10.1097/00005053-199904000-00005
- Liotti, M., Tanzilli, A., Bincoletto, A. F., Dentale, F., & Lingiardi, V. (2025). How we (do not) trust: defensive profiles of epistemic trust and its disruptions. *Current Psychology*, 44, 16538-16551. doi: 10.1007/s12144-025-08361-2
- Lumley, M. A., Stettner, L., & Wehmer, F. (1996). How are alexithymia and physical illness linked? A review and critique of pathways. *Journal of Psychosomatic Research*, 41(6), 505-518. doi: 10.1016/S0022-3999(96)00222-X
- Malfanti, A., Yotsidi, V., Giannouli, E., Paraskevadaki, E., & Malogiannis, I. (2024). Concurrent Associations Between Trauma and Borderline Personality Organization in Emerging Adulthood. *Mediterranean Journal of Clinical Psychology*, 12(3). doi: 10.13129/2282-1619/mjcp-4331

- Martino, G., Di Giuseppe, M., Silvestro, O., Vicario, C. M., Giorgianni, C. M., Ruggeri, P., Sparacino, G., Juli, M. R., Schwarz, P., Lingiardi, V., Lo Coco, G., Gangemi, S., & Ricciardi, L. (2025). Defense mechanisms in immune-mediated diseases: a cross-sectional study focusing on Severe Allergic Asthma and Hymenoptera Venom Anaphylaxis patients. *Frontiers in Psychology, 16*, 1608335. doi: 10.3389/fpsyg.2025.1608335
- Martino, G., Viola, A., Vicario, C. M., Bellone, F., Silvestro, O., Squadrito, G., Schwarz, P., Lo Coco, G., Fries, W., & Catalano, A. (2024). Psychological impairment in inflammatory bowel diseases: the key role of coping and defense mechanisms. *Research in Psychotherapy: Psychopathology, Process, and Outcome, 26*(3), 731. doi: 10.4081/ripppo.2023.731
- Mechler, J., Lindqvist, K., Magnusson, K., Ringström, A., Krafman, J. D., Alvinzi, P., Kassius, L., Sowa, J., Andersson, G., & Carlbring, P. (2024). Guided and unguided internet-delivered psychodynamic therapy for social anxiety disorder: A randomized controlled trial. *Npj Mental Health Research, 3*(1), 21. doi: 10.1038/s44184-024-00063-0
- Merlo, E. M., Tutino, R., Myles, L. A. M., Alibrandi, A., Lia, M. C., & Minasi, D. (2024a). Type 1 Diabetes Mellitus, Psychopathology, Uncertainty and Alexithymia: A Clinical and Differential Exploratory Study. *Healthcare, 12*(2). doi: 10.3390/healthcare12020257
- Merlo, E. M., Tutino, R., Myles, L. A. M., Lia, M. C., & Minasi, D. (2024b). Alexithymia, intolerance to uncertainty and mental health difficulties in adolescents with Type 1 diabetes mellitus. *Italian Journal of Pediatrics, 50*(1), 99. doi: 10.1186/s13052-024-01647-4
- Mesce, M., Nimbi, F. M., Sarzi-Puttini, P., Lai, C., & Galli, F. (2025). Towards a better definition of nociplastic pain conditions: a psychological grounded study on fibromyalgia, chronic headache and vulvodinia. *European Journal of Psychotraumatology, 16*(1), 2461434. doi: 10.1080/20008066.2025.2461434
- Messina, I., Gelo, O. C. G., Gullo, S., Sambin, M., Mosconi, A., Fenelli, A., Curto, M., & Orlinsky, D. (2018). Personal background, motivation and interpersonal style of psychotherapy trainees having different theoretical orientations: An Italian Contribution to an International Collaborative Study on Psychotherapy Training. *Counselling and Psychotherapy Research, 18*(3), 299-307. doi: 10.1002/capr.12176
- Moher, D., Liberati, A., Tetzlaff, J., & Altman, D. G. (2009). Preferred reporting items for systematic reviews and meta-analyses: the PRISMA statement. *British Medical Journal, 339*. doi: 10.1136/bmj.b2535
- Mostowik, J., Mielimaka, M., Rutkowski, K., & Ostrowski, T. (2022). Time in the Mental Health Context: Neurotic Symptomatology, Defense Mechanisms and the Perception of Time Perspective Among Patients Diagnosed With Neurotic and Personality Disorders - A Clinical Study. *Psychological Reports, 125*(1), 232-255. doi: 10.1177/0033294120978164
- Mrozowicz-Wrońska, M. (2023). Defense mechanisms in affective disorders-the state of the art. *Psychiatria Polska, 57*(1), 197-206. doi: 10.12740/PP/145919
- Nickel, R., & Egle, U. T. (2006). Psychological defense styles, childhood adversities and psychopathology in adulthood. *Child Abuse & Neglect, 30*(2), 157-170. doi: 10.1016/j.chabu.2005.08.016
- Nimbi, F. M., Palla, L., Bottiroli, S., Castelli, L., Sarzi-Puttini, P., & Galli, F. (2025). A cluster analysis of psychological variables to identify profiles of Nociplastic pain: A cross-sectional study in women with fibromyalgia, chronic headache and vulvodinia. *Journal of Psychosomatic Research, 195*, 112203. doi: 10.1016/j.jpsychores.2025.112203
- Nimbi, F. M., Renzi, A., Limoncin, E., Bongiovanni, S. F., Sarzi-Puttini, P., & Galli, F. (2024a). Central sensitivity in fibromyalgia: testing a model to explain the role of psychological factors on functioning and quality of life. *Clinical and Experimental Rheumatology, 42*(6). doi: 10.55563/clinexprheumatol/h8jgv3
- Nimbi, F. M., Renzi, A., Mesce, M., Limoncin, E., & Galli, F. (2024b). Central sensitization symptoms in vulvodinia: exploring the role of temperament, personality traits, childhood adverse events, defense mechanisms, and mental pain on quality of life. *The Journal of Sexual Medicine, 21*(10), 912-921. doi: 10.1093/jsxmed/qdae096
- Oliverio, G. W., Meduri, A., De Salvo, G., Trombetta, L., & Aragona, P. (2022). OCT angiography features in diabetes mellitus type 1 and 2. *Diagnostics, 12*(12), 2942. doi: 10.3390/diagnostics12122942
- Page, M. J., McKenzie, J. E., Bossuyt, P. M., Boutron, I., Hoffmann, T. C., Mulrow, C. D., & Moher, D. (2021). The PRISMA 2020 statement: an updated guideline for reporting systematic reviews. *British Medical Journal, 372*. doi: 10.1136/bmj.n71
- Peglar, M., & Borgen, F. H. (1984). The defense mechanisms of coronary patients. *Journal of Clinical Psychology, 40*(3), 669-679. doi: 10.1002/1097-4679(198405)40:3%3C669::AID-JCLP2270400306%3E3.CO;2-X
- Perry, J. C. (2014). Anomalies and specific functions in the clinical identification of defense mechanisms. *Journal of Clinical Psychology, 70*(5), 406-418. doi: 10.1002/jclp.22085
- Perry, J. C., & Henry, M. (2004). Studying defense mechanisms in psychotherapy using the Defense Mechanism Rating Scales. *Advances in Psychology, 136*, 165-192. doi: 10.1016/S0166-4115(04)80034-7
- Perry, J. C. (1990). *Defense Mechanism Rating Scales (DMRS), fifth edition*. Cambridge, MA: Author. doi: 10.1002/jclp.22085
- Perry, J. C., Bekes, V., & Starrs, C. J. (2022). A systematic survey of adults' health-protective behavior use during early COVID-19 pandemic in Canada, Germany, United Kingdom, and the United States, and vaccination hesitancy and status eight months later. *Preventive Medicine Reports, 30*, 102013. doi: 10.1016/j.pmedr.2022.102013
- Plaza-González, S., Zabala-Baños, M. D. C., Astasio-Picado, Á., & Jurado-Palomo, J. (2022). Psychological and sociocultural determinants in childhood asthma disease: impact on quality of life. *International Journal of Environmental Research and Public Health, 19*(5), 2652. doi: 10.3390/ijerph19052652
- Plutchik, R., Kellerman, H., & Conte, H. R. (1979). A structural theory of ego defenses and emotions. In C. E. Izard (Ed.), *Emotions in personality and psychopathology* (pp. 227-257). Boston, MA: Springer US. doi: 10.1007/978-1-4613-2892-6\_9
- Prout, T. A., Di Giuseppe, M., Zilcha-Mano, S., Perry, J. C., & Conversano, C. (2022). Psychometric properties of the Defense Mechanisms Rating Scales-Self-Report-30 (DMRS-SR-30): Internal consistency, validity and factor structure. *Journal of Personality Assessment, 104*(6), 833-843. doi: 10.1080/00223891.2021.2019053
- Prout, T. A., Zilcha-Mano, S., Aafjes-van Doorn, K., Békés, V., Christman-Cohen, I., Whistler, K., Kui, T., & Di Giuseppe, M. (2020). Identifying predictors of psychological distress during COVID-19: a machine learning approach. *Frontiers in Psychology, 11*, 586202. doi: 10.3389/fpsyg.2020.586202
- Renzi, A., & Mariani, R. (2025). What Is the Relationship Be-

- tween Narcissism and Maladaptive Daydreaming? The Role of Defense Mechanisms as Mediators. *Psychiatric Research and Clinical Practice*. doi: 10.1176/appi.prcp.20250018
- Ricciardi, L., Silvestro, O., Martino, G., Catalano, A., Vicario, C. M., Lund-Jacobsen, T., Schwarz, P., Sapienza, D., Gangemi, S., Pioggia, G., & Giorgianni, C. M. (2024). Health-related quality of life in severe hypersensitivity reactions: focus on severe allergic asthma and hymenoptera venom anaphylaxis—a cross-sectional study. *Frontiers in Psychology, 15*, 1394954. doi: 10.3389/fpsyg.2024.1394954
- Ricciardi, L., Spatari, G., Vicario, C. M., Liotta, M., Cazzato, V., Gangemi, S., & Martino, G. (2023a). Clinical Psychology and Clinical Immunology: is there a link between Alexithymia and Severe Asthma? *Mediterranean Journal of Clinical Psychology, 11*(3). doi: 10.13129/2282-1619/mjcp-3704
- Ríos Martínez, B. P., Chávez León, E., Rangel Rodríguez, G. A., & Pedraza Moctezuma, L. G. (2010). Defense mechanisms in cardiovascular disease patients with and without panic disorder. *Salud Mental, 33*(3), 219–227. Retrieved from: [https://www.scielo.org.mx/scielo.php?script=sci\\_arttext&pid=S0185-33252010000300002&lng=es](https://www.scielo.org.mx/scielo.php?script=sci_arttext&pid=S0185-33252010000300002&lng=es)
- Rnic, K., Santee, A. C., Hoffmeister, J. A., Liu, H., Chang, K. K., Chen, R. X., & LeMoult, J. (2023). The vicious cycle of psychopathology and stressful life events: A meta-analytic review testing the stress generation model. *Psychological Bulletin, 149*(5-6), 330. doi: 10.1037/bul0000390
- Salvatore, S., Lauro-Grotto, RP, Gennaro, A., & Gelo, O (2009). Grasping the dynamic nature of intersubjectivity. In J. Valsiner, P. C. M. Moolenaar, M. C. D. P. Lyra, & N. Chaudhary (Eds.), *Dynamic Process Methodology in the Social and Developmental Sciences* (pp. 171-190). New York: Springer.
- Sesar, K., Dodaj, A., & Kovačević, M. (2022). Childhood Maltreatment, Aspects of Emotional Processing and Borderline Personality Disorder. *Mediterranean Journal of Clinical Psychology, 10*(1). doi: 10.13129/2282-1619/mjcp-3373
- Siegal, R. S. (1969). What are defense mechanisms? *Journal of the American Psychoanalytic Association, 17*(3), 785-807. doi: 10.1177/000306516901700305
- Silverman, J., & Doorn, A. V. (2023). Coping and defense mechanisms: A scoping review. *Clinical Psychology: Science and Practice, 30*(4), 381. doi: 10.1037/eps0000139
- Silvestro, O., Ricciardi, L., Catalano, A., Vicario, C. M., Tomaiuolo, F., Pioggia, G., Squadrito, G., Schwarz, P., Gangemi, S., & Martino, G. (2023). Alexithymia and asthma: a systematic review. *Frontiers in Psychology, 14*, 1221648. doi: 10.3389/fpsyg.2023.1221648
- Silvestro, O., Vicario, C. M., Costa, L., Sparacino, G., Lund-Jacobsen, T., Spatola, C. A. M., Merlo, E. M., Viola, A., Giorgianni, C. M., Catalano, A., Fries, W., Lo Coco, G., & Martino, G. (2025). Defense mechanisms and inflammatory bowel diseases: a narrative review. *Research in Psychotherapy: Psychopathology, Process, and Outcome, 28*(1), 854. doi: 10.4081/ripppo.2025.854
- Somma, A., Gialdi, G., Arioli, C., Boscaro, L., De Ciechi, A., Mastinu, L., Frau, C., & Fossati, A. (2024). Assessing Malig-
- nant Narcissism and its Associations with Dark Triad Dimensions, Social Deviance, Personality Disorders, Self-Harming Behaviors, Aggression, and Personality Functioning: A Study Among Community-Dwelling Participants and Psychotherapy Participants. *Mediterranean Journal of Clinical Psychology, 12*(2). doi: 10.13129/2282-1619/mjcp-4079
- Tanzilli, A., Cibelli, A., Liotti, M., Fiorentino, F., Williams, R., & Lingardi, V. (2022). Personality, Defenses, Mentalization, and Epistemic Trust Related to Pandemic Containment Strategies and the COVID-19 Vaccine: A Sequential Mediation Model. *International Journal of Environmental Research and Public Health, 19*(21), 14290. doi: 10.3390/ijerph192114290
- Tanzilli, A., Di Giuseppe, M., Giovanardi, G., Boldrini, T., Caviglia, G., Conversano, C., & Lingardi, V. (2021). Mentalization, attachment, and defense mechanisms: a psychodynamic Diagnostic Manual-2-oriented empirical investigation. *Research in Psychotherapy: Psychopathology, Process, and Outcome, 24*(1). doi: 10.4081/ripppo.2021.531
- Teixeira, R. J., Vaz Marques, M., Brandão, T., Pinto, R., & Pereira, A. (2022). Exploratory effects of structured mindfulness programs (MBCT and MBSR) on posttraumatic growth, alexithymia, and type D personality. *Mediterranean Journal of Clinical Psychology, 10*(3). doi: 10.13129/2282-1619/mjcp-3570
- Tracchegiani, J., Fontana, A., Benzi, I. M. A., Muzi, L., & Carone, N. (2025). Profiles of Childhood Maltreatment and Defenses: Associations with Personality Functioning in Emerging Adulthood. *Journal of Child & Adolescent Trauma, 1*-15. doi: 10.1007/s40653-025-00710-4
- Vaillant, G. E. (1994). Ego mechanisms of defense and personality psychopathology. *Journal of Abnormal Psychology, 103*(1), 44. doi: 10.1037/0021-843X.103.1.44
- Vaillant, G. E., Bond, M., & Vaillant, C. O. (1986). An empirically validated hierarchy of defense mechanisms. *Archives of General Psychiatry, 43*(8), 786-794. doi: 10.1001/archpsyc.1986.01800080072010
- Wells, G. A., Brodsky, L., O'Connell, D., Shea, B., Henry, D., Mayank, S., & Tugwell, P. (2003, October). An evaluation of the Newcastle Ottawa Scale: an assessment tool for evaluating the quality of non-randomized studies. In *XI International Cochrane Colloquium Book of Abstracts* (p. 26). Spain: Barcelona.
- Ye, G., Baldwin, D. S., & Hou, R. (2021). Anxiety in asthma: a systematic review and meta-analysis. *Psychological Medicine, 51*(1), 11-20. doi: 10.1017/S0033291720005097
- Yellowlees, P. M., & Ruffin, R. E. (1989). Psychological defenses and coping styles in patients following a life-threatening attack of asthma. *Chest, 95*(6), 1298-1303. doi: 10.1378/chest.95.6.1298
- Yılmaz, M., Taş, B., Çelik, D., Perry, J. C., Tanzilli, A., Di Giuseppe, M., & Lingardi, V. (2024). Initial validation of the Turkish version of the defense mechanisms rating scales-self-report-30. *Frontiers in Psychology, 15*, 1432170. doi: 10.3389/fpsyg.2024.1432170

Online supplementary material:

Supplementary Table 1. Main characteristics of the included studies.

Supplementary Table 2. Quality assessment of cross-sectional studies (Newcastle-Ottawa Scale).

Supplementary Table 3. Quality assessment of longitudinal studies (Newcastle-Ottawa Scale).

Supplementary Table 4. Quality assessment of the randomised clinical trial (Randomized Controlled Trial of Psychotherapy Quality Rating Scale).

Supplementary Table 5. PRISMA 2020 abstract checklist.

Supplementary Table 6. PRISMA 2020 Checklist.