Review

Best practice recommendations for clinical psychological interventions in patients with fibromyalgia

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Received on September 13, 2024; accepted in revised form on November 11, 2024.

Clin Exp Rheumatol 2025; 43: 1112-1121.

Key words: fibromyalgia, clinical psychology, psychological assessment, psychological treatments, practical recommendations

Competing interests: none declared.

ABSTRACT

Objective. *The role of psychological aspects in the overall care of fibromyalgia (FM) is extremely relevant. Nevertheless, there is a lack of practical guidelines for rheumatologists for supporting effective referral to clinical psychology specialists together with the implementation of psychological practices in the treatment of FM.*

Methods. *The current work reviews the core psychological and psychopathological features highlighted by FM patients together with the best psychological interventions for treating FM.*

Results. *General recommendations are provided concerning key aspects of psychological assessment and related treatment choices taking into account individual characteristics of each patient.*

Conclusion. *The current work suggests a practical checklist for clinicians reporting the main key points for supporting an adequate referral to clinical psychologists.*

Introduction

Fibromyalgia (FM) is a chronic musculoskeletal condition with unknown causes, characterised by widespread pain, fatigue, mood disturbances, cognitive issues, and sleep problems (1), significantly impacting physical and psychological well-being, often leading to disability and reduced quality of life (QoL) (2). The role of psychological aspects in the overall care of FM patients is extremely relevant. Specifically, psycho-affective symptoms worsen physical ones and, a relapse of FM physical symptoms has a critical impact on psychological experiences. Overcoming a symptom-based approach and moving towards a more global and personalised care of FM, the present opinion paper aims to:

i. summarise the main psychological and psychopathological features highlighted by the literature on FM, especially referring to updated systematic reviews and meta-analysis on different clinically-relevant topics, including: i) the role of personality and related disorders; ii) alexithymia; iii) psychopathological disturbances; iv) cognitive dysfunction; v) suicide risk; vi) adverse life events and traumatic experiences; vii) sexual and relational issues.
ii. evaluate the effectiveness of different evidence-based psychotherapeutic treatments for FM and in turn, providing recommendations on the main benefits of each approach/technique referring to primary and secondary treatment outcomes relevant for FM, such as pain, a wide range of FM and psychopathological symptoms, general functioning, coping strategies and QoL.

Moreover, the current work provides a final summary of general recommendations and, a checklist of key points for effectively guiding the referral to a psychological assessment and treatment (Appendix 1).

Psychological and psychopathological features

Personality traits

Personality is defined as relatively stable ways of thinking, feeling, behaving, and relating to others (3). Different personalities traits may be more or less functional (adaptive or maladaptive) depending on the situation and the environment. In this sense, personality can significantly affect how pain is evaluated and how people react to it, such as the process of adapting to a chronic disease, the adherence to

Table I. Key points for referral to psychological evaluation.
Based on revisions of international literature and experience in clinical psychological practice, we have provided a list of key-points that may be useful for rheumatologists for screening FM patients who may benefit from psychological care. This list does not represent a psychological evaluation intended to produce a psychological diagnosis.

Key points	Yes	No
Presence of debilitating pain resistant to pharmacological therapy (despite good compliance with pharmacological therapy)		
Comorbidity with diagnosed psychopathological disorders		
Psychotropic medication assumption current assumption previous assumption		
Psychotherapy or psychological sessions current previous		
History of adverse events (radical and sudden changes in the person's life) and/or traumatic events (events that have threatened the physical and mental integrity of the person) childhood adulthood		
Psychosocial maladjustment (difficulties in job continuity, relational problems, social isolation, legal issues)		
Recurrent states of anxiety		
Depressed or deflected mood tone		
Current death ideation and/or past suicidal attempts		
Emotional lability with rapid mood shifts		
Lack of emotional reactivity and limited access to emotional states		
Difficulties in describing emotions and internal states		
Intrusive thoughts (general or specifically associated with illness dimensions), with or without associated ritualistic and repetitive actions		
Pain catastrophising		
Impulsive behaviour and emotional reactivity		

treatment and clinical services, and the adoption of healthier life-styles (4-7). Montoro Aguilar *et al*. (8) showed significant associations between the central processing of painful stimuli with neuroticism and extraversion traits among FM patients. Furthermore, Bucourt *et al*. (9) found that FM patients were characterised by higher levels of agreeableness, neuroticism and openness. compared to rheumatoid arthritis, spondyloarthritis and Sjögren's syndrome. This study also highlighted that higher neuroticism and lower conscientiousness were linked to higher levels of self-report pain, confirming a connection between personality and perception of pain. Similarly, Torres *et al*. (10) found a subgroup of FM patients exhibiting distinct characteristics, including a predisposition to emotional distress (high neuroticism scores), reduced positive emotions and a tendency toward inhibited behaviour (low extraversion scores), low motivation for new experiences (low openness to experience scores), heightened antagonism, decreased cooperation, and a propensity for maladaptive social conflict resolution strategies (low agreeableness scores), as well as low initiative, diligence, and attention to detail (low conscientiousness scores).

Personality disorders

A personality disorder (PD) is characterised by a persistent pattern of inner experiences and behaviours that significantly deviates from cultural norms and expectations. This pattern is pervasive, inflexible, typically begins in adolescence or early adulthood, remains stable over time, and causes distress or impairment (3). PD seem to be more prevalent among people with FM compared to healthy populations (11). In a recent review conducted by Kleykamp *et al*. (12), the estimated weighted prevalence of PDs in FM was 19%. Cluster C personality disorders, especially obsessive and avoidant types, appeared to be the most prevalent in FM. Gonzalez *et al*. (13) reported the presence of other maladaptive personality domains in FM, such as hypochondriasis, depression, hysteria, and features akin to the schizophrenia spectrum,. Interestingly, MMPI-2 maladaptive personality traits were able to discriminate women with FM from healthy controls (14), especially referring to negative emotionality, social isolation, and reduced hedonic capacity (15).

The investigation of personological and other psychological factors seems to be crucial also considering their influences on pharmacological treatments. Accordingly, a recent study (16) revealed different psychological factors were linked to the ineffectiveness of serotonin and noradrenaline reuptake inhibitors treatments. These factors included elevated levels of 1) affective temperaments, such as depressive, irritable, and anxious moods; 2) personality traits like introversion and neuroticism, and 3) schizotypy, particularly cognitive disorganisation.

The current understanding of FM and personality disorders does not support the concept of a specific 'FM personality type'. Nonetheless, substantial evidence indicates a higher prevalence of personality disorders in FM compared to other chronic pain conditions and healthy individuals. Therefore, an evaluation of these aspects in the assessment phase is highly suggested, in addition to the presence of mental health professionals in the multidisciplinary team. Identifying specific personality disorders and traits can aid in tailoring treatments and elucidating why pharmacological therapies alone may be less effective for certain patient subgroups.

Alexithymia

Alexithymia encompasses several key features that are difficulties in both identifying and describing emotion, difficulties in distinguishing bodily sensations to emotional states, a concrete and externally orientated thinking with reduced imaginative processes (17). Subsequently it has been recognised as a risk factor for both physical and mental health (18-20), including FM (21). A recent systematic review (22) has highlighted:

a) a heterogeneous prevalence rates of alexithymia in FM ranging from 19% to 92%, with an overall mean prevalence of 48%;
b) FM patients showed significant higher alexithymia scores compared to healthy controls and individuals with other chronic pain conditions;
c) alexithymia contributed to increased pain perception, both directly through the activation of central neural pathways responsible for enhancing pain perception and, indirectly, by amplifying negative affect or misinterpreting physical symptoms.

Moreover, a recent study (23) showed that FM patients exhibited elevated levels of alexithymia with a propensity among FM patients towards worry, fearfulness, sensitivity to criticism and punishment, and pessimism. Furthermore, they are more prone to being self-destructive, fragile, lacking an internal locus of control, and displaying low self-efficacy and self-esteem.

Hence, the high prevalence of alexithymia in FM and its correlation with pain severity sustains the importance of implementing psychological interventions aiming at enhancing emotional capabilities, and in turn reducing alexithymia levels. In fact, the improvement of emotional awareness facilitates the reduction of clinical symptomatology, both physical and mental, associated with FM.

Psychiatric/psychopathological comorbidities

Overall, there is increasing evidence that FM patients display greater psychological distress than general population and other chronic pain, mainly characterised by depressive and anxious symptoms. For instance, a comprehensive review of FM (24) reported point-prevalence estimates of mood and anxiety disorders varying between 13–48% and 27–60% respectively, together with lifetime prevalence rates ranging between 20–86% and 16–60%, respectively. Similarly, a meta-analysis (25) reported that the overall pooled point-prevalence of major depressive disorder in FM varied between 25-45%, depending on the assessment methods applied; whereas, lifetime prevalence reached 65%.

A recent systematic review (12) offers both a weighted current and a lifetime prevalence of the most common psychiatric/psychopathological comorbidities in FM patients:

- The current prevalence rates for depression, not otherwise specified, and major depressive disorder (MDD) were 43.0% and 32.0%, respectively. Whereas the lifetime prevalence rates were 63.0% and 52.3%, respectively.
- Dysthymic disorder was evaluated only in a study, showing a lifetime prevalence of 53%.
- The prevalence rate for bipolar disorder was 26.2%
- The current prevalence rates for anxiety, not otherwise specified, was 30% as well as 8.4% for generalised anxiety disorder (GAD) together with a lifetime prevalence of GAD of 9.1%.
- The current prevalence rate for phobic disorders (*i.e.* social phobia) is 17.7% as well as 14.0% lifetime.
- The prevalence rate for panic disorder was 33.0%
- The prevalence rate for post-traumatic stress disorder (PTSD) was 39.1%, while lifetime prevalence was 16.1%.
- The current prevalence rate for obsessive-compulsive disorder (OCD) is 2% and 4.3% for lifetime prevalence

Therefore, the most predominant comorbidity observed across all the studies reviewed was associated to depressive disorders, affecting over half of the patients at some point in their lives.

Cognitive dysfunction: fibrofog

Fibrofog or dyscognition plays a significant role in FM characterised by symptoms such as forgetfulness and difficulties in concentration and expression (26-28). Substantial evidence supports both subjective and objective cognitive impairments in individuals with FM (27, 29, 30), particularly in working memory tasks involving executive control, encoding, updating, and replacement processes (28, 31). Deficits in implicit, episodic, and semantic memory, processing speed, and executive functions such as attentional and inhibitory control and decision-making have also been consistently observed (28, 32-39). Further research is needed to fully understand the role of cognitive impairments in the onset and persistence of FM, despite their acknowledged impact on individuals' daily lives.

Suicide and related phenomena

FM patients represent a clinical population characterised by a significant risk of suicide and related phenomena considering its complexity of psychological functioning and psychopathological comorbidities. Indeed, recent systematic reviews and meta-analysis (40, 41) showed that the overall suicidal ideation (SI) prevalence was 29.57% [95%CI 1.84–72.07], with an OR of 9.12 [95%CI 1.42–58.77] compared to general population. The suicide attempt prevalence was 5.69% [95%CI 1.26–31.34], with an OR of 3.12 [95%CI 1.37–7.12]. Empirical studies also provisionally revealed as possible determinants for the engagement in suicide behaviours among FM patients a constellation of factors, which include socio-demographic variables (*i.e.* employment status), medical conditions (*i.e.* severity of FM, additional chronic pain related diseases, obesity; sleep disorders) and psychiatric comorbidities (*i.e.* substance use disorders and major depression disorder). Among them, psychiatric comorbidities seemed to be the most relevant due to its power to explain the significance of association between FM and suicide attempts. A special attention should be focused on specific psychiatric comorbidities that are characterised by core features considered as relevant risk factors for suicide, namely impulsivity (*i.e.* substance use disorders) and hopelessness (*i.e.* major depression disorder) (42, 43).

Life events and traumatic experiences
According to Creed (44), several events including significant crises or challenges in different life contexts (*e.g.* work, relationships, finances, housing) can influence FM and, in turn they should be considered in clinical assessments (45-47). These studies suggest that traumatic experiences are more robustly involved in shaping intricate FM presentations. Specifically, it was observed that the total score capturing the severity of cumulative abusive experiences (*i.e.* childhood sexual, physical and emotional abuse) had the strongest associations with FM compared to other adverse events (47). However, physical accidents and other stressors throughout the life span were also associated with FM (48, 49). Trauma exposure may occur at any stage of life; nevertheless, traumatic events during childhood and repeated over time can lead to severe psychopathological and somatic consequences due to the vulnerable state of the central nervous system during this developmental period (50-54). These patients show reduced responsiveness to physical and psychological stressors (55) a higher tendency to catastrophise, avoid or suppress emotions sustaining the negative impact of adverse life events (56). Considering associations between life-span stressors and FM, these patients could benefit from an intervention that improves emotional regulation trough the increase of patients' ability to assess stressful situations and select appropriate coping strategies (47, 57), such as psychodynamic therapies and eye movement desensitisation and reprocessing (EMDR) (58).

Sexuality and relationships
Sexuality and relationships are other two areas that are significantly affected by FM. Some studies report very high presence of sexual impairment in FM patients, with women appearing more affected than men, especially in the area of desire, arousal and sexual pain (59-63). This high presence of sexual difficulties may be due to multifactorial causes, including the FM condition itself, associated symptoms, treatments used, together with relational and social experiences. For instance, a negative association between sexual functioning and psychological factors such as depression, poor sleep quality, anxiety, fatigue, and pain-related interference in daily life was well-established (64-67). Sexual issues have an impact on the romantic relationship affecting partners as well (68, 69). Interference in sexual life can create tension and emotional stress within relationships, as sexuality is often viewed as the 'glue' holding the relationship together in many couples (70, 71). Thus, it is increasingly imperative for rheumatologists to recognise the importance of sexual expression and the potential for QoL among FM patients for a more comprehensive assessment and management of the syndrome. Sexuality is an 'unmet need where FM patients often refrain from discussing their sexuality with physicians, despite acknowledging that such discussions could enhance guidance and support in managing their sexual issues (60).

Psychological treatments for FM
Diverse psychological treatments are available for FM patients. However, the literature does not unanimously agree on the detailed impacts of these approaches and techniques on specific FM outcomes, such as pain and other FM-related symptoms, general functioning, associated psychopathology, coping strategies, and QoL. Cognitive behavioural therapy (CBT) and 'Third Wave' therapies such as acceptance and commitment therapy (ACT) and mindfulness-based interventions have become prominent in this regard. However, psychological interventions encompass a wider range of approaches, including patient education, psychodynamic psychotherapies, EMDR and other techniques.

Patient education
The EULAR guidelines (1) emphasise the role of patient education as a crucial first step to increase patient adherence to other treatments and improve related outcomes. These educational interventions generally aim at informing patients and caregivers about the condition, the available treatment options, and explaining their potential impacts on family dynamics and patient behaviour (72, 73). Patient education involves activities planned by qualified professionals such as providing correct and scientific-based information, reshaping disease perceptions, and improve health-related behaviours (74).

- *Psychoeducation* for FM covers a range of topics such as differences between acute *versus* chronic pain, FM nature and contributing factors, safe and effective treatments, symptoms, and coping strategies. These programmes aim at improving treatment adherence, self-confidence, self-esteem, and pain management in FM (73, 75-77). Patients need to be assured that FM is a real medical condition, validating their suffering by emphasising their pivotal role in its management and the need to learn techniques to enhance their QoL (76, 78). Based on the findings of a recent systematic review on emotional, clinical, and functional outcomes of psychoeducation (73), it proves highly beneficial in reducing affective and clinical symptoms, while also enhancing overall physical function. When patients gain insight into the nature of FM and dispel related misconceptions, they are more likely to proactively manage their condition, seek support networks and additional resources, and develop a more optimistic outlook on treatment and prognosis (79).

- *Pain neuroscience education (PNE)* is a common approach for managing chronic pain in patients (80) typically involving structured sessions where patients learn about the basic neurophysiology of pain, aiming at changing their perception to make it less threatening (81). The goal is to improve various aspects such as negative health perception, pain tolerance, and the use of active strategies to reduce kinesiophobia, along with addressing psychological aspects like catastrophising, magnification, and rumination. A systematic review with meta-analysis of eight randomised controlled trials (82) revealed statistically significant moderate reductions in pain intensity (SMD: -0.76; 95% CI: -1.33 to -0.19). However, there were no pre-post differences in FM

impact, anxiety, and pain catastrophising. Follow-up assessments indicated significant improvements with small effect size only in FM impact. Despite the limited evidence, PNE may be recommended especially if combined with other CBT-based interventions, meditation, and body exercises (83).

Cognitive-behaviour therapy approaches

CBT is one of the most frequently employed therapeutic interventions for FM. The main goal of CBT approaches is to replace dysfunctional thought patterns with more adaptive ways of thinking (84). Overall, CBT may help patients reduce catastrophic thinking while promoting an understanding of their identity as a healthy person with a pain disorder (85). Recent systematic reviews have highlighted positive effects of CBT on QoL, catastrophising, and pain acceptance (86), as well as on the impact of FM, sleep quality, and depressive symptoms (87, 88), both at the end of treatment and after follow-up periods. Robust empirical evidence (89) suggested large improvements of pain symptoms after CBT programmes considering both short- (<3 months) and medium-term (3-12 months) periods. Regarding QoL, short-term outcomes of CBT interventions were moderate.

Acceptance and commitment therapy

Acceptance and commitment therapy is a therapeutic developed from the CBT framework that emphasises the modification of individuals' relationship with their thoughts. Through experiential exercises, the patient moves from a perspective of avoiding negative feelings to observing and accepting them (90). There is evidence showing that ACT is effective and comparable to other treatments available for chronic pain considering pain acceptance, QoL, pain intensity, anxiety, and depression (91-94).

Meditation and mindfulness-based interventions

Meditation is a practice stemming from Buddhist traditions and has enabled the development of mindfulness techniques, defined as the awareness that emerges through intentional and non-judgmental attention toward present moment experiences (95-97). Through mindfulness practice, individuals will exhibit decreased reactivity to unpleasant experiences and increased introspection, resulting in an improved emotional regulation and self-awareness (98).

Recent reviews (99, 100) have found that mindfulness-based interventions improved pain, QoL, depression, and anxiety symptoms in patients with FM. Additional studies (101-103) have found improvement in sleep quality, pain interference with daily activities, and reduced psychological symptomatology. Mindfulness combined with multidisciplinary treatments compared to TAU has also been found to significantly reduce indirect costs and utilisation of primary health care services (104).

Psychodynamic psychotherapy

Psychodynamic psychotherapy (PP) comprises a constellation of interventions typically characterised by 40 sessions or less [*e.g.* short-term psychodynamic psychotherapy (STPP)], which focus on emotional and relational dynamics linked to development, unresolved emotional and interpersonal conflicts stemming from significant childhood or past traumatic experiences (105). Techniques employed in STPP include support, interpretation, clarification of unconscious patterns and schemas enacted, exploration and articulation of feelings related to conflictual relationships both past and present (105) that have been observed to elicit positive results on different somatic symptoms of FM syndrome severity, depression, anxiety, and general psychiatric symptoms (88, 105, 106, 107). Large effect sizes were observed concerning short (*i.e.* less than 3 months), medium (3 to 6 months) and long-term (more than 6 months) post-treatment outcomes. Moderate therapeutic effects on interpersonal problems were also shown (105) with respect to a short-term follow-up period. In the PP family, the emotional awareness and expression therapy (EAET) (108) helps patients to recognise their emotions, explore their underlying causes, and find appropriate ways to communicate and manage them. Available data showed that EAET highlighted a significant, albeit small, reduction in FM symptoms and widespread pain, together a higher percentage of patients achieved a 50% reduction pain compared to CBT programmes (109).

Emotional exposure-based treatment

Emotional exposure-based treatment known as exposure therapy is designed to facilitate the controlled and gradual exposure of individuals to negative or painful emotions in order to enhance their capacity to effectively cope with such emotions (110). Literature showed moderate-to-large effect sizes on stress symptoms, FM impact, and emotional distress; whereas, small-to-moderate improvements on pain symptoms and FM-related disability were detected (111, 112).

Hypnosis

Hypnotic techniques encompass various methods used to induce a hypnotic state or a trance-like condition characterised by focused attention, heightened suggestibility, and deep relaxation (113). Literature reviews indicate that hypnotherapy is effective in modulating pain and major symptoms in FM patients (106, 107, 114). Symptom-oriented hypnosis aims at reducing pain, fatigue, sleep problems, anxiety and depression; whereas general hypnotherapy focuses on resolving emotional conflicts and unresolved trauma associated with FM (107). In addition, audio-recorded hypnosis may be an effective, feasible, and affordable alternative for reducing symptoms associated with chronic pain (115), which should be further supported with future studies on FM.

Eye movement desensitisation and reprocessing (EMDR)

EMDR has been developed in the late 1980s as a psychotherapeutic method (116) to address traumatic memories and their associated stress-related symptoms (117).

Kavakci *et al.* (118, 119) conducted a pilot study involving seven cases of fibromyalgia (FM) patients, finding that EMDR treatment over five to eight ses-

sions led to significant improvements in pain perception, physical function, post-traumatic symptoms, and depression. Gardoki-Souto's team (120) proposed combining EMDR with transcranial current stimulation to enhance pain relief in FM. A recent RCT (121) involving 79 FM patients compared EMDR with treatment-as-usual (TAU) and showed that EMDR combined with TAU significantly improved pain, FM functioning, depression severity, sleep quality, and trauma-related symptoms. Similarly, Borst's study (122) on a six-session EMDR programme in FM patients showed substantial reductions in pain and post-traumatic stress, which persisted at a three-month follow-up. Arias-Suárez's research (123) demonstrated that group EMDR reduced pain intensity, anxiety, and depressive symptoms while improving quality of life. Though more long-term studies are needed, current evidence suggests that EMDR integrated with standard care may be effective for FM patients, especially those impacted by trauma.

Conclusion: towards an increasing application of multidisciplinary approaches

Recent studies on FM and chronic pain syndromes suggest that multidisciplinary treatment programmes yield superior outcomes in managing pain and reducing long-term disability associated with FM compared to unimodal approaches (124, 125). Effective intervention strategies should encompass a combination of pharmacological treatment, physical exercises, and CBT psychological therapy and psychoeducation, which are the most commonly employed psychological approaches. According to the large individual variability of patients with FM patients and few scientific evidence on the effectiveness of different psychological approaches beyond CBT-oriented, clinical practice and research need to move to expand the range of psychological treatments for FM patients, based on personal needs and case specificity.

Literature highlights that multidisciplinary interventions lead to significant short-term improvements in FM symptoms, including pain intensity, fatigue, psychological symptoms, and physical function (2, 87, 126-130), which are also in line with EULAR guidelines (1). Psychological care and related treatments are often recognised as ancillary options by physicians and they are recommended only when the patient does not respond to pharmacological protocols. This represents a contradiction to incremental evidence concerning a close interrelationship between psychological well-being and better outcomes of pharmacological treatments in FM (16).

Take home messages

- An evaluation of personality profiles and related disorders during the assessment phase is highly recommended, along with the inclusion of mental health professionals in the multidisciplinary team.
- Recurrent impairment in familial, social, and professional life may indicate a personality disorder, sustaining the administration of psychological interventions.
- Assessing alexithymia (*i.e.* difficulties in identifying and describing emotions), and supporting emotional awareness in FM patients has a key role on the reduction physical and mental symptoms.
- Recurrent and debilitating anxiety/mood disorders, self-reported irritability, sleep disturbances, and feelings of loneliness warrant psychopathological assessment. In cases of positive findings for psychiatric disorders (*e.g.* panic attacks, major depression, PTSD), a referral for psychiatric counselling is advised.
- Fibrofog, manifested as difficulties in memory, concentration, and/or speech, should prompt neuropsychological assessment.
- Exploring past suicide ideation and/or attempts indicates the need for systematic evaluation of suicide-related phenomena and related risk factors.
- Examining stressful life events and early traumatic experiences in patient history-taking, with positive findings requiring psychological interventions.
- Assessing sexual functioning in FM is highly recommended during diagnosis and routine care, as data indicates a high prevalence of sexual impairment. The focus should be on alleviating FM symptoms and enhancing sexual satisfaction, rather than solely addressing sexual functioning.
- All patients should receive psychoeducation at the beginning of treatment to enhance understanding of FM, dispel misconceptions, and foster a more optimistic and realistic outlook on treatment and prognosis.
- Pain neuroscience education, combined with CBT-based interventions and mindfulness-based interventions together with physical exercises, may be recommended to reduce pain intensity and overall impact of FM.
- CBT approaches are beneficial in pain reduction and enhancing quality of life, although long-term stability of outcomes beyond 12 months post-treatment requires further research.
- Within CBT approaches, ACT is effective in improving FM impact and pain acceptance, while mindfulness and meditation techniques are recommended for pain management when integrated with other treatments.
- Psychodynamic psychotherapy is supported for patients with somatic symptoms like widespread fatigue, pain, and stiffness, as well as those experiencing anxiety, depression, and general psychiatric symptoms.
- EMDR is a brief and effective approach recommended for individuals burdened by traumatic episodes or life events.

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