



PSYCHOLOGICAL DETERMINANTS OF MEDICAL TREATMENT OUTCOMES

Determinantes Psicológicos dos Desfechos do Tratamento Médico

Determinantes Psicológicos de los Resultados del Tratamiento Médico

 <https://doi.org/10.5281/zenodo.17982088>

Luana Victória da Silva Nascimento

Graduanda em Psicologia
Universidade do Centro do Paraná - UCP
e-mail: luananascimento@ucpparana.edu

Larissa Musial Gaspar

Graduanda em Psicologia
Universidade do Centro do Paraná - UCP
e-mail: larissagaspar@ucpparana.edu

Maria Julia Lopes

Graduanda em Psicologia
Universidade do Centro do Paraná - UCP
e-mail: marialopes2@ucpparana.edu

- **Tipo de Estudo:** Revisão de Literatura
- **Recebido:** 12/12/2025
- **Aceito:** 16/12/2025
- **Publicado:** 18/12/2025



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RESUMO

Os desfechos dos tratamentos médicos têm sido cada vez mais compreendidos como resultado de interações complexas entre processos biológicos e variáveis psicológicas. Para além dos mecanismos fisiológicos, estados emocionais, padrões cognitivos e dinâmicas interpessoais exercem influência significativa sobre a forma como os pacientes vivenciam a doença e respondem às intervenções terapêuticas. Esta revisão de literatura analisa o papel dos determinantes psicológicos nos resultados do tratamento médico, considerando sua influência em diferentes contextos clínicos. Foi realizada uma análise ampla da produção científica disponível em bases de dados internacionais reconhecidas, incluindo PubMed/MEDLINE, Scopus, Web of Science, Embase, LILACS, SciELO e Cochrane Library. Foram incluídas publicações entre 2015 e 2025, abrangendo estudos empíricos, contribuições teóricas e análises clínicas que abordaram fatores psicológicos no contexto do cuidado médico. A literatura selecionada foi examinada por meio de uma síntese temática, permitindo a identificação de padrões recorrentes e modelos conceituais que relacionam variáveis psicológicas à efetividade terapêutica. Os achados indicam que estresse psicológico, ansiedade, sintomas depressivos, crenças relacionadas à doença e a qualidade da relação terapêutica exercem influência substancial sobre a adesão ao tratamento, o manejo de sintomas e o prognóstico clínico. Esses fatores impactam não apenas o comportamento do paciente, mas também sistemas fisiológicos relacionados à função imunológica, aos processos inflamatórios e à regulação neuroendócrina. Além disso, evidências sugerem que percepções negativas da doença e estratégias de enfrentamento inadequadas estão consistentemente associadas a piores desfechos em condições agudas e crônicas. De modo geral, a literatura sustenta que a integração de perspectivas psicológicas ao tratamento médico é fundamental para a otimização dos resultados clínicos. Abordagens interdisciplinares que consideram dimensões emocionais, cognitivas e relacionais em conjunto com o cuidado biomédico tendem a favorecer maior efetividade terapêutica, engajamento do paciente e qualidade de vida. Esses achados reforçam a importância de incorporar o conhecimento psicológico aos modelos assistenciais, à formação profissional e à tomada de decisão clínica.

Palavras-chave: Adesão ao Tratamento. Doença Crônica. Psicologia da Saúde. Relação Médico-Paciente.

ABSTRACT

Medical treatment outcomes have increasingly been understood as the result of complex interactions between biological processes and psychological variables. Beyond physiological mechanisms, emotional states, cognitive patterns, and interpersonal dynamics exert a significant influence on how patients experience illness and respond to therapeutic interventions. This literature review examines the role of psychological determinants in medical treatment outcomes, considering their impact across different clinical contexts. A comprehensive analysis of the scientific literature was conducted using internationally recognized databases, including PubMed/MEDLINE, Scopus, Web of Science, Embase, LILACS, SciELO, and the Cochrane Library. Publications from 2015 to 2025 were included, encompassing empirical studies, theoretical contributions, and clinical analyses addressing psychological factors within medical care. The selected literature was examined through thematic synthesis, allowing the identification of recurring patterns and conceptual models linking psychological variables to therapeutic effectiveness. The findings indicate that psychological stress,



anxiety, depressive symptoms, illness-related beliefs, and the quality of the therapeutic relationship exert substantial influence on treatment adherence, symptom management, and clinical prognosis. These factors affect not only patient behavior but also physiological systems related to immune function, inflammatory processes, and neuroendocrine regulation. In addition, evidence suggests that negative illness perceptions and maladaptive coping strategies are consistently associated with poorer outcomes in both acute and chronic conditions. Overall, the literature supports the view that integrating psychological perspectives into medical treatment is essential for optimizing clinical outcomes. Interdisciplinary approaches that address emotional, cognitive, and relational dimensions alongside biomedical care tend to enhance therapeutic effectiveness, patient engagement, and quality of life. These findings underscore the importance of incorporating psychological knowledge into healthcare models, professional training, and clinical decision-making.

Keywords: *Chronic Disease. Health Psychology. Physician-Patient Relations. Treatment Adherence.*

RESUMEN

Los resultados del tratamiento médico son cada vez más comprendidos como el producto de interacciones complejas entre procesos biológicos y variables psicológicas. Más allá de los mecanismos fisiológicos, los estados emocionales, los patrones cognitivos y las dinámicas interpersonales influyen de manera significativa en la forma en que los pacientes experimentan la enfermedad y responden a las intervenciones terapéuticas. Esta revisión de la literatura analiza el papel de los determinantes psicológicos en los resultados del tratamiento médico, considerando su influencia en distintos contextos clínicos. Se llevó a cabo una revisión amplia de la producción científica disponible en bases de datos internacionales de referencia, incluyendo PubMed/MEDLINE, Scopus, Web of Science, Embase, LILACS, SciELO y la Cochrane Library. Se incluyeron publicaciones comprendidas entre 2015 y 2025, que abarcaron estudios empíricos, aportes teóricos y análisis clínicos relacionados con factores psicológicos en la atención médica. La literatura seleccionada fue analizada mediante una síntesis temática, lo que permitió identificar patrones recurrentes y marcos conceptuales que vinculan las variables psicológicas con la efectividad del tratamiento. Los hallazgos indican que el estrés psicológico, la ansiedad, los síntomas depresivos, las creencias relacionadas con la enfermedad y la calidad de la relación terapéutica ejercen una influencia significativa sobre la adherencia al tratamiento, el manejo de los síntomas y el pronóstico clínico. Estos factores afectan no solo el comportamiento del paciente, sino también sistemas fisiológicos relacionados con la función inmunológica, los procesos inflamatorios y la regulación neuroendocrina. Asimismo, la evidencia sugiere que las percepciones negativas de la enfermedad y las estrategias de afrontamiento inadecuadas se asocian de manera consistente con peores resultados en enfermedades agudas y crónicas. Los enfoques interdisciplinarios que abordan las dimensiones emocionales, cognitivas y relacionales junto con la atención biomédica parecen mejorar la efectividad terapéutica, el compromiso del paciente y la calidad de vida. Estos resultados subrayan la importancia de incorporar el conocimiento psicológico en los modelos de atención sanitaria, la formación profesional y la toma de decisiones clínicas.

Palabras clave: *Adherencia al Tratamiento. Enfermedad Crónica. Psicología de la Salud. Relación Médico-Paciente.*



1. INTRODUCTION

Contemporary medicine increasingly recognizes that health and disease are complex phenomena shaped not only by biological mechanisms but also by psychological and social factors. This perspective represents a shift from a purely biomedical model toward a more comprehensive understanding of human health, acknowledging that emotional, cognitive, and behavioral processes interact dynamically with physiological systems (Johnson, 2025).

This conceptual shift is grounded in the biopsychosocial model, which emphasizes the interdependence of mind and body in the development, progression, and treatment of disease. By integrating psychological and social dimensions into medical care, this model broadens the scope of clinical practice and promotes a more holistic and patient-centered approach (Saha; Melnikm 2025).

Psychological conditions such as stress, anxiety, and depression are highly prevalent among patients with both acute and chronic illnesses. Numerous studies have consistently associated these conditions with poorer medical outcomes, including increased symptom burden, slower recovery, and higher morbidity and mortality rates (Kirkbride *et al.*, 2024).

From a biological perspective, psychological distress can influence neuroendocrine, inflammatory, and immune pathways. Chronic activation of stress-related systems, such as the hypothalamic–pituitary–adrenal axis, may contribute to immune dysregulation and exacerbate disease progression, highlighting the physiological relevance of psychological factors (Alotiby, 2024).

In addition to emotional states, patients' cognitive representations of illness play a decisive role in their engagement with medical treatment. Beliefs about disease severity, controllability, and treatment effectiveness directly influence adherence to medical recommendations and the adoption of health-promoting behaviors (Laranjeira *et al.*, 2023).

Illness perceptions and expectations can either facilitate or hinder treatment success. Patients who perceive their condition as manageable and believe in the efficacy of treatment are more likely to adhere to therapeutic regimens, whereas negative or catastrophic beliefs are associated with avoidance, nonadherence, and poorer outcomes (Shahin; Kennedy; Stupans, 2019).

The quality of the physician–patient relationship represents another critical psychological dimension of medical care. Empathy, effective communication, and mutual trust have been consistently linked to improved adherence, greater patient satisfaction, and enhanced clinical outcomes across diverse medical settings (Wu; Jin; Wang, 2021).



Therefore, this review aims to examine the scientific literature on psychological determinants of medical treatment outcomes and to highlight their implications for clinical practice, professional training, and the development of interdisciplinary healthcare models.

2. METHODOLOGY

This study was designed as a narrative-integrative literature review aimed at exploring the influence of psychological factors on medical treatment outcomes. Rather than following a rigid systematic protocol, the review adopted a flexible analytical framework to allow the inclusion of heterogeneous study designs and theoretical approaches relevant to psychology and clinical medicine.

The literature search was conducted between January and December 2025 using multiple electronic databases, including PubMed/MEDLINE, Scopus, Web of Science, Embase, LILACS, SciELO, and the Cochrane Library. Search strategies were independently adapted for each database, combining controlled vocabulary and free-text terms related to psychological determinants, mental health variables, patient behavior, and medical treatment outcomes. No geographical restrictions were applied, and studies published in English, Portuguese, and Spanish were considered.

Eligibility criteria included original empirical studies, theoretical analyses, and clinical reviews that examined psychological variables in relation to medical treatments across acute and chronic conditions. Articles focusing exclusively on psychiatric disorders without a medical treatment component, pediatric-only populations, or experimental laboratory outcomes without clinical relevance were excluded. The publication period ranged from 2015 to 2025 to ensure both conceptual depth and contemporary relevance.

Study selection was performed through an initial screening of titles and abstracts, followed by full-text evaluation of potentially relevant articles. Data extraction emphasized conceptual frameworks, psychological variables assessed, clinical contexts, and reported impacts on treatment outcomes.

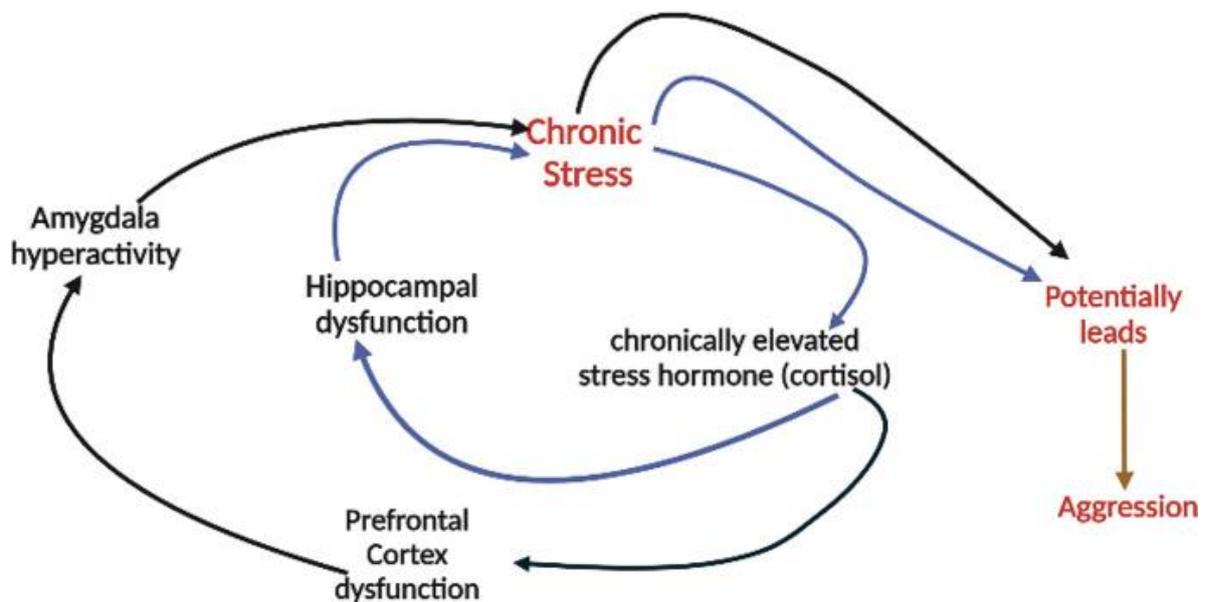
The included studies were synthesized thematically, allowing the identification of recurring patterns, divergences, and knowledge gaps, which informed the critical discussion of psychological influences on medical care.

3. RESULTS AND DISCUSSION

3.1 Psychological Stress and Physiological Responses in Medical Conditions

The literature consistently demonstrates that psychological stress exerts profound effects on physiological processes involved in the onset and progression of medical conditions. Chronic stress activates neuroendocrine pathways, particularly the hypothalamic–pituitary–adrenal axis and the sympathetic nervous system, leading to sustained elevations in cortisol and catecholamines. These alterations contribute to metabolic imbalance, endothelial dysfunction, and increased inflammatory activity, which are recognized contributors to disease development (Figure 1) (Mbiydzennyuy; Qulu, 2024).

Figure 1: The schematic illustrates the interplay between chronic stress, the hypothalamic-pituitary-adrenal (HPA) axis, the prefrontal cortex, the amygdala, and the hippocampus in their roles in aggression. It depicts the bidirectional relationships and regulatory mechanisms among these components. Chronic stress activates the HPA axis, leading to increased release of stress hormones, such as cortisol. Elevated cortisol levels can have detrimental effects on the prefrontal cortex, impairing its regulatory control over emotions and aggression. The prefrontal cortex, responsible for executive functions and emotional regulation, has inhibitory connections with the amygdala, a brain region involved in emotional processing and aggression. Chronic stress and dysregulation of the HPA axis can disrupt this inhibitory control, resulting in increased amygdala activation and heightened aggression. The hippocampus, crucial for memory formation and stress regulation, interacts with the HPA axis and can be affected by chronic stress. Dysfunction in the hippocampus can further contribute to dysregulation of the stress response and exacerbate aggressive behavior. Overall, the schematic provides a visual representation of the intricate relationships between chronic stress, the HPA axis, the prefrontal cortex, the amygdala, and the hippocampus in shaping aggression.

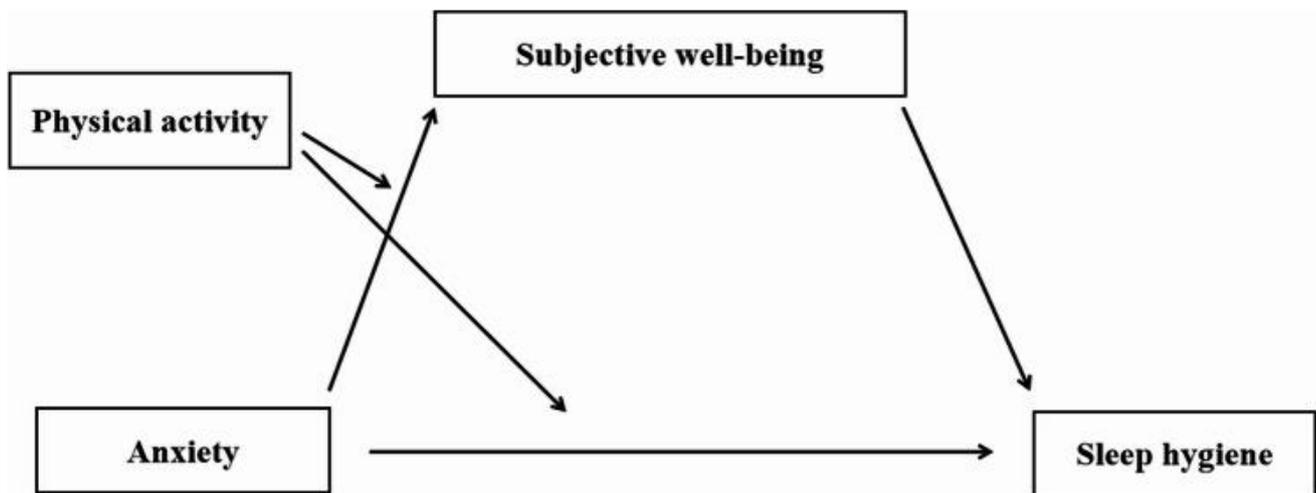


Fonte: Mbiydzennyuy; Qulu (2024).

Several studies indicate that prolonged exposure to psychological stress is associated with adverse outcomes in cardiovascular diseases, autoimmune disorders, and oncological conditions. Stress-related hormonal dysregulation may impair immune surveillance, facilitate tumor progression, and exacerbate inflammatory responses. Such findings highlight that stress is not merely a psychological experience but a biologically relevant factor in medical pathology (Shchaslyvyi; Antonenko; Telegeev, 2024).

In addition to direct physiological effects, stress influences health-related behaviors that indirectly affect disease outcomes. Individuals experiencing chronic stress are more likely to engage in maladaptive behaviors such as physical inactivity, poor dietary choices, substance use, and disrupted sleep patterns. These behaviors further compound physiological vulnerability and undermine treatment effectiveness (Figure 2) (Peng *et al.*, 2025).

Figure 2: Schematic representation of the relationships between anxiety, physical activity, subjective well-being, and sleep hygiene. The model illustrates how psychological distress can indirectly influence health outcomes by promoting maladaptive behavioral patterns, such as physical inactivity and impaired sleep, which are known to negatively affect disease management and treatment effectiveness.



Fonte: Peng *et al.* (2025).

The interaction between stress and medical treatment response has also been documented. Elevated stress levels have been associated with reduced responsiveness to pharmacological interventions and delayed recovery following surgical procedures. These effects underscore the



importance of assessing and managing stress as part of comprehensive medical care. Collectively, the evidence supports the inclusion of stress assessment and management strategies within medical treatment protocols. Addressing psychological stress may enhance physiological resilience, improve treatment response, and contribute to better overall clinical outcomes (Tam *et al.*, 2024).

3.2 Anxiety, Depression, and Treatment Adherence

Anxiety and depression are among the most prevalent psychological conditions affecting patients with medical illnesses. The reviewed studies consistently demonstrate that these conditions are strongly associated with reduced adherence to medical treatment regimens, including medication noncompliance, missed appointments, and premature discontinuation of therapy (Wang *et al.*, 2025).

Depressive symptoms can impair cognitive functioning, motivation, and executive control, limiting patients' capacity to follow complex treatment plans. Fatigue, hopelessness, and diminished self-efficacy commonly observed in depression further compromise engagement with medical care and self-management behaviors (Persin *et al.*, 2024).

Anxiety, while distinct from depression, also exerts a significant influence on adherence. Heightened anxiety may lead to avoidance behaviors, excessive concern about side effects, and misinterpretation of bodily sensations, resulting in inconsistent treatment use. In some cases, anxiety may paradoxically increase healthcare utilization while simultaneously reducing adherence to prescribed therapies (Farris; Derby; Kibbey, 2025).

The bidirectional relationship between psychological distress and medical outcomes is well documented. Poor adherence resulting from anxiety or depression can worsen disease progression, which in turn exacerbates psychological symptoms, creating a self-perpetuating cycle of distress and poor health outcomes. The literature strongly supports the integration of psychological screening and interventions into routine medical care. Early identification and treatment of anxiety and depression have been shown to improve adherence, enhance treatment effectiveness, and reduce healthcare costs (Nguyen *et al.*, 2025).

3.3 Illness Perception and Coping Strategies

Patients' perceptions of illness represent a central psychological determinant of medical treatment outcomes. The reviewed studies emphasize that beliefs about disease causation, severity,



controllability, and timeline significantly influence patients' emotional responses and health behaviors. Negative illness perceptions, such as viewing the condition as uncontrollable or inevitably progressive, are associated with increased psychological distress and reduced engagement in treatment. These beliefs can lead to passive coping strategies, avoidance of medical care, and diminished adherence to therapeutic recommendations (Yielder *et al.*, 2024).

Conversely, adaptive illness perceptions are linked to more effective coping strategies and improved outcomes. Patients who perceive their illness as manageable and understand the rationale behind treatment are more likely to adopt problem-focused coping behaviors, actively participate in decision-making, and maintain long-term adherence (Conduah; Essiaw; Ofoe, 2025).

Coping strategies play a mediating role between illness perception and clinical outcomes. Active coping approaches, including information-seeking, planning, and acceptance, are associated with better psychological adjustment and improved quality of life. In contrast, maladaptive coping strategies such as denial and disengagement are consistently linked to poorer outcomes (Bagheri *et al.*, 2023).

The findings suggest that psychoeducational interventions aimed at modifying maladaptive illness beliefs and promoting adaptive coping strategies are essential components of comprehensive medical care. Such interventions can enhance patients' understanding, engagement, and resilience throughout the treatment process (Mirhosseini *et al.*, 2025).

3.4 Therapeutic Alliance and Physician–Patient Communication

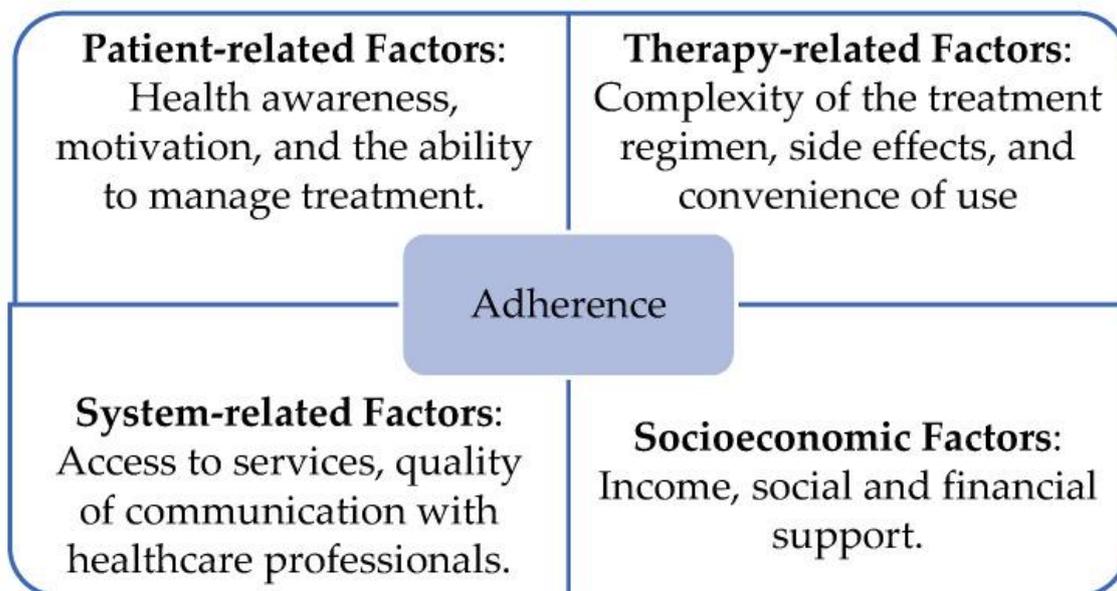
The therapeutic alliance between healthcare professionals and patients emerges as a critical determinant of treatment success across medical disciplines. Effective communication, empathy, and mutual trust have been consistently associated with improved adherence, patient satisfaction, and clinical outcomes (Velasco-Durántez *et al.*, 2023).

Clear and empathetic communication enhances patients' understanding of their diagnosis, treatment options, and prognosis. This understanding reduces uncertainty and anxiety, enabling patients to make informed decisions and engage more actively in their care. Patients who perceive their physicians as attentive and supportive are more likely to disclose concerns, including psychological distress and difficulties with treatment adherence (Kwame; Petrucka, 2021).

Conversely, poor communication and lack of empathy can undermine the therapeutic

relationship, leading to dissatisfaction, mistrust, and nonadherence. These factors may contribute to treatment discontinuation and poorer health outcomes, regardless of the quality of medical interventions. The literature underscores the need for structured communication skills training in medical education. Enhancing physicians' interpersonal competencies is essential for strengthening the therapeutic alliance and optimizing treatment outcomes (Figure 3) (Religioni *et al.*, 2025).

Figure 3: Schematic representation of factors influencing treatment adherence. The model emphasizes the impact of healthcare system characteristics, particularly communication quality and interpersonal competence of healthcare professionals, on patient adherence and treatment continuity.



Fonte: Religioni *et al.* (2025).

3.5 Integration of Psychological Interventions into Medical Care

The integration of psychological interventions into medical treatment has gained increasing attention as a strategy to improve clinical outcomes. Evidence from diverse medical contexts demonstrates that interventions such as cognitive-behavioral therapy, stress management, and mindfulness-based approaches can positively influence both psychological well-being and physical health (Behnavaz *et al.*, 2025).

Integrated care models have been associated with reduced symptom burden, improved functional status, and enhanced quality of life. These models address psychological distress alongside



medical treatment, fostering a more comprehensive approach to patient care. Psychological interventions also contribute to improved treatment adherence and self-management. By targeting emotional regulation, cognitive restructuring, and coping skills, these interventions empower patients to engage more effectively with their medical treatment plans (Marques; Battistella, 2025).

Despite demonstrated benefits, several barriers limit the widespread implementation of integrated psychological care, including resource constraints, limited interdisciplinary training, and fragmented healthcare systems. These challenges highlight the need for systemic changes in healthcare delivery. Overall, the evidence supports the expansion of interdisciplinary care models that integrate psychological expertise into medical practice. Such approaches are essential for achieving effective, patient-centered, and sustainable healthcare outcomes (Wiesepepe *et al.*, 2025).

4. CONCLUSIONS

This integrative literature review demonstrates that psychological determinants play a fundamental role in shaping medical treatment outcomes, reinforcing the biopsychosocial perspective as essential to contemporary healthcare. Psychological factors such as stress, anxiety, depression, and coping styles consistently influence disease progression, therapeutic response, and recovery processes, interacting directly with biological and physiological mechanisms.

The evidence also indicates that patients' cognitive and emotional representations of illness significantly affect treatment adherence and engagement with medical care. Beliefs, expectations, and illness perceptions can either facilitate or hinder therapeutic effectiveness, highlighting the need for clinicians to consider psychological dimensions when designing and implementing treatment plans.

Additionally, the quality of the physician–patient relationship emerges as a decisive factor in treatment success. Empathy, effective communication, and trust contribute to improved adherence, patient satisfaction, and clinical outcomes, emphasizing that relational aspects of care are not supplementary but integral to effective medical practice.

Despite the growing recognition of these psychological influences, their systematic incorporation into medical care remains limited. The findings underscore the importance of interdisciplinary approaches that integrate psychological assessment and intervention into healthcare systems, as well as the need for future research to strengthen evidence-based models that address both psychological and medical determinants of treatment outcomes.



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