

# The health psychology: an integrated approach

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## ABSTRACT

In contemporary nephrology and dialysis care, oriented toward developing care more closely connected to the person's resources, needs, beliefs, and opinions, it is important to adopt a comprehensive, systemic approach useful for advancing care in nephrology and dialysis from a personalized, patient-oriented perspective: health psychology. Health psychology aims to promote an integrated understanding of health and illness and to facilitate the integration of biomedical and psychological knowledge through research, education, and professional activities in nephrology and dialysis care. It considers not only integrated aspects of disease state, types of thoughts, emotions, and behaviors, but also factors related to social, cultural, gender, and socioeconomic inequalities. Another systemic variable is health and well-being in the workplace as an element influencing a person's psychosomatic balance. In a vision of care based on the biopsychosocial and systemic model, health psychology connects, in a circular way with feedback dynamics, modern lifestyles with people's mental health, where stress-management processes are central in the genesis and disruption of mind-body balance. Health psychology also regards the health and psychological well-being of healthcare providers as determinants strongly influencing the quality of care. It brings elements for reflection, comparison, and design in nephrology and dialysis care, integrating psychological, physical, technological, and social components. By considering these dimensions, health psychology strengthens patient-centered practice and offers a systemic perspective that supports both patients and providers. It provides tools to understand complex interactions, guide interventions, and promote holistic care that addresses biological, psychological, and social factors in modern nephrology and dialysis settings.

**Keywords:** Health psychology, Multidisciplinary approach, Nephrology and dialysis care, Patient-oriented, Personalized care

## Introduction

In nephrology and dialysis care, an integrated approach is required that combines biomedical interventions with humanistic and psychological perspectives within a circular, systemic, and relational mind-body framework. Classical Greek thought originally conceived mind and body as a single entity generating health and well-being (1). Plato later posited their separation, whereas Hippocrates viewed illness as primarily physical (2). Aristotle still defined health as stable bodily function but introduced eudaimonia, extending health to well-being and linking it to thoughts, emotions, and behaviors (3,4). With Socrates, self-knowledge became foundational: caring for oneself entails knowing oneself (5). This Socratic integration did not prevail in Western medicine; instead, a dualistic, reductionist model persisted in which physicians held authority and individuals became passive

patients (6). Health came to be classified by anatomical and clinical taxonomies, in which a third-party system defined what is "normal" or "pathological," further distancing persons from their own health through managerial, policy-driven logics (7). Such reductionism obscures essential dimensions of human well-being, which are linked to happiness, analytically framed as hedonic, satisfaction of needs and absence of pain, or eudaimonic self-realization and pursuit of human purpose (8). Positive affect is typically transient, with mood reverting toward a baseline consistent with set-point dynamics (9). Personality traits shape long-term well-being, and altruistic goals tend to yield more durable benefits (10). A contemporary health culture in nephrology and dialysis care should therefore promote models of care closely aligned with individual needs and grounded in a comprehensive, systemic, personalized, and patient-oriented perspective. Health psychology provides such a framework by jointly considering the physical and psychological well-being of patients, healthcare providers, and caregivers within an integrated systemic approach.

## Health Psychology

Health psychology is a branch of psychology that aims to promote the understanding of health and illness and facilitate the integration of biomedical and psychological knowledge

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through research, training and professional activities (11). Health psychology is concerned with: (1) health promotion; (2) health maintenance; (3) disease prevention; (4) disease treatment; (5) etiology; (6) diagnosis; (7) health policy; and (8) systems of care (12). Health psychology has the following general objectives: a) Identification of resources personal and social useful in managing one's health status with a proper lifestyle; b) Identification of the person's personal and social needs; c) Identification of the processes that produce opinions, decisions, behaviors, attitudes and actions related to health conditions and illness; d) Identification of coping and self-care methods in managing stress and illness; e) Identification of methods of wellness research. Health psychology examines the relationship between cognitive, emotional, psychosocial, behavioral, social and cultural variables and people's health status.

Research in health psychology is based on a variety of research designs, descriptive, predictive, intervention, qualitative, experimental, and quasi-experimental (13), and uses a variety of conceptual models, particularly from social psychology, social cognitive psychology, and personality psychology (14). Research focuses on a number of issues related to health and disease states: 1) identification of risk and self-protection behaviors; 2) intentions, reactions, attitudes, opinions and beliefs; 3) social representations; 4) types and effects of stress; 5) types and effects of emotions; 6) psychosocial coping strategies and resources; 7) what are the effects of social class of membership; 8) what is the correct lifestyle; 9) how to comply with therapeutic prescriptions and treatments; 10) patient-therapist relationships and communication styles; 11) systems of care; 12) the situation of the terminally ill; 13) dying.

Health psychology interventions can be applied in the nephrology and dialysis field at the individual, small group, community, and organizational levels and cover psychoeducational treatment, behavior change, mental and physical health promotion, vulnerable and at-risk groups, the world of social, gender, cultural, and socioeconomic inequalities, and occupational health. In the meta-analysis of Borello et al., psychosocial interventions in hemodialysis (HD) as psychological support, relaxation, and psychoeducation, reduce depression, anxiety, and improve quality of life. Results strengthen the health psychology premise that addressing affective and coping processes modifies HD outcomes (15). Large chronic kidney disease (CKD) cohort data show psychological distress is common and independently associated with mortality, including suicide attempts and adverse outcomes. The findings justify routine mental-health screening within nephrology units. They also imply downstream benefits for HD populations via early identification and intervention (16). Maintenance HD patients display substantial depression and anxiety burdens tied to comorbidity, education, polypharmacy, and HD duration. Psychological symptom severity relates to impaired quality of life. These associations motivate targeted psychosocial assessment and tailored interventions in HD (17). Higher distress correlates with poorer self-management, central to CKD and HD adequacy. Health-psychology constructs as distress, self-efficacy, map onto adherence behaviors. Addressing distress may indirectly optimize HD readiness and outcomes (18).

In HD patients, routine depression screening is feasible and clinically pertinent. Early identification of psychological morbidity aligns with improved care processes and potential outcomes (19). Brief psychometric tools perform adequately in HD settings, enabling efficient case-finding. Psychometric suitability facilitates routine psychological surveillance in HD units. Screening is a prerequisite for timely, targeted psychosocial intervention (20). A nine-session psychosocial program improved psychological well-being in CKD patients approaching HD. Targeting coping and illness perceptions yielded clinically relevant benefits.

In health psychology the stress is a fundamental variable. A model called the General Adaptation Syndrome was developed to describe how people respond to stressful events, defined as stressors. defines three activation phases: 1) the alarm phase; 2) the resistance phase; and 3) the exhaustion phase. In the alarm phase, the person is aware of the novelty of the situation and physiological correlates, e.g., heart and respiratory rate, blood pressure, muscle tone and psychophysiology (arousal) are activated. The endurance phase is activated when the stressful stimulus persists for a long period of time and is the state that activates adaptive behavior, whereby more resources are invested in concentration and general performance functions. The exhaustion phase is always present when the stressful stimulus is present for a long period of time and is characterized by a gradual decrease in endurance. If the endurance phase decreases too rapidly or suddenly, psychosomatic illnesses may also occur. In the general adaptation syndrome model, it is important to emphasize the fundamental point that the stressor response pattern is not always specific. On the other hand, other researchers believe that the subject's evaluation of the stimulus or stressful situation plays a key role in determining the mode and level of the specific response (22). In the nephrology and dialysis field, the classic General Adaptation Syndrome label is rarely used explicitly, instead, closely aligned constructs are used as stress response, hypothalamic-pituitary-adrenal (HPA) axis dysregulation, distress, allostatic load. Some papers used the General Adaptation Syndrome framework with the three phases of alarm, resistance and exhaustion in nephrology and dialysis patients (23-25).

## Conceptual Models

The development of new epistemological perspectives, changes at the societal level, new needs, expanded concepts of health and well-being, especially systemic, cyclical, and nonlinear cause-and-effect theories, and new demands in the doctor-patient relationship, allow the emergence of new models with a different worldview useful in nephrology and dialysis care. These models are represented by psychosomatic, psychodynamic, biopsychosocial, and psychoneuroendocrineimmunological (PNEI) models.

## Psychosomatic model

The mind-body model is a system that analyses the connections, relationships and mechanisms of interaction between mind and body. This definition goes beyond the Cartesian distinction between mind (*res cogitans*) and body (*res*

extensa) and presents a mind-body system understood as a holistic, comprehensive, indivisible, nonreductive, indivisible entity, a single psychophysical unit. In patients and professionals of the nephrology and dialysis, mental events affect the body; negative emotions and thoughts have a negative effect on the body, and the pathological state of the body has a negative effect on the cognitive and emotional state of the psyche. Conversely, in patients, positive emotions and thoughts have a positive effect on the body, and the health and well-being state of the body has a positive effect on the cognitive and emotional state of the psyche.

The concept of psychosomatics, that is, the close communicative relationship between mind and body, has also been systematically studied and strongly hypothesized by Alexander (26). Psychosomatics suggests that psychopathological dynamics cause organic diseases. This is evident in the cognitive and emotional dynamics that occur during stress, as loss of mental balance causes changes in somatic balance or homeostasis and negatively activates various organ systems. For psychosomatics, health exists when there is a balance between the physical and mental representations that each subject possesses. Every state of health, well-being or disease is a psychosomatic condition, and the human being is an organism in which mind and body are different aspects of one living system, the human being. Etiology in psychosomatic studies follows a cyclic multifactorial model rather than a linear single-factor model. In a nonlinear, single-factor pathway to disease, there is a factor A that creates an effect B that follows it in time, and by knowing B, we can know A that precedes it in time. This worldview is systematic and complex, and illness is generated within a global system. Here, mental, physical, social, and environmental factors simultaneously determine effects, which in turn influence the preceding factors in a cyclic manner. Because of this circular connection, any event occurring in the body can be analyzed from a psychosomatic point of view. Emotional factors especially influence the body through neuroendocrine pathways (27). It is essential that psychosomatic studies focus on the emotional aspects. According to Alexander, disease develops when the homeostatic balance between the external (social and physical) and internal (psychological and physical) environments is lost. This homeostasis is lost through two mechanisms: a) activation of the sympathetic nervous system to prepare to fight or flee, and b) activation of the parasympathetic nervous system to withdraw from a state of activity to a state of dependence. As can be seen, the emotional component is decisive. In the first case, the person is in a state of alertness, hypervigilance, tension and anxiety, which produces a somatic discharge: hyperactivation of all organ systems and metabolism. This state is transient, after which the person regains a state of equilibrium, or a suppression comes into play that does not allow aggression to be released, and if this dynamic persists for a long period of time, all mental energies, especially neurotically repressed deep emotions, cause a chronic state of tension, hyperactivity and anxiety, and chronic physical pathologies for example high blood pressure, diabetes, headaches and hyperthyroidism (28). When the parasympathetic nervous system is activated, a person may drop out of the behavior, refuse to deal with the situation and seek help

and dependence, a form of withdrawal. In these situations, the person constantly seeks affection, protection and love, but these needs may not be met by the relationship, leading to a state of frustration, suppressed emotions and conflict between dependence and independence, and chronic negative emotional stimuli that affect gastric function, particularly dyspepsia, gastritis, and gastric ulcers (28).

In nephrology and dialysis, the literature shows some articles used an interpretation of findings through the psychosomatic model. In advanced CKD, greater psychological flexibility relates to lower prevalent and incident depression, indicating that cognitive-affective processes modulate somatic disease burden. Findings align with a psychosomatic model wherein appraisal and regulation of stress shape mental symptoms that feed back onto clinical engagement. Acceptance-based strategies are posited as levers within renal care (29). Brief intradialytic laughter sessions significantly reduced depressive symptoms, showing that targeted affective interventions can shift mood within the HD. This supports a bidirectional mind-body pathway where emotional states influence symptom experience and adherence. Psychosomatic-informed, low-burden programs are feasible in HD (25). Chairside yoga enhanced feasibility and signaled improvements in quality of life and self-efficacy, suggesting autonomic and cognitive pathways linking practice to symptom relief. The intervention operationalizes the psychosomatic model: modifying mental and physiological arousal during HD to affect perceived burden. Embedding mind-body modules may complement biomedical HD care (30).

### Psychodynamic model

The psychodynamic model of functional mind-body linkage was elaborated in depth psychology through Freud's psychoanalytic work. Drawing on theories of libido and neurosis, Freud proposed an integrated mental-physical-social model in which psychological events may precipitate physical disorders: cognitive processes are inherently affective and thought, emotion dynamics generate bodily expressions capable of modifying physiological processes (31). In neurosis, somatic symptoms were interpreted as manifestations of unconscious conflict between defensive operations and unacceptable sexual wishes; repressed mental energy is redirected to the body via transference, such that psychic energy is transformed into somatic expression (31). Within this framework: (a) psychosexual energy unacceptable to consciousness is displaced onto the body; (b) a transformation mechanism mediates psyche-to-soma energy transfer; (c) somatic symptoms embody unconscious meaning and symbolically represent intrapsychic conflict; and (d) symptoms emerge in anatomic-functional regions that acquire expressive significance during development, so that defective symbolization results in bodily symptom formation. Freud's account, closely aligned with psychosomatics, was expanded by subsequent analysts. Groddeck introduced the Es as the unconscious agency shaping behavior, whereby health and disease are expressions of the Es and somatic pathology constitutes the symbolic inscription of its dynamics (32). Therapeutically, decoding the "language" of the Es through interpretation can restore health by elucidating these symbolic processes (32).

Deutsch emphasized psychosomatic balance between mental processes and bodily functioning as fundamental to health, reconceptualizing Freud's transformation as a continuous life-long mechanism rather than an intermittent event (33). Health reflects ongoing transformation that channels unacceptable aggressive and sexual impulses, preventing states of tension, anguish, and pain and supporting adaptation to reality (33). Illness arises when this energy is no longer processed by physiological transformation but instead accumulates and is directed, excessively and chronically, toward specific organs or systems unable to absorb it; in narcissistic configurations, for example, energy is predominantly internalized rather than externally mediated. To date, the literature does not report studies specifically addressing psychodynamic-relevant phenomena in nephrology and dialysis care, representing a gap that future research should address by incorporating this model into a more global conception of the patient.

### Biopsychosocial model

The biopsychosocial model recognizes that health, well-being and disease are the result of connections and relationships between biological, psychological and social dimensions. The model is multidimensional, holistic and systemic, and the dynamics between different systems, especially interpersonal and social systems related to personality development, are important. This model is based on the general theory of systems (34), according to which a system  $S$  is made up of a set of elements that are interconnected and interact in a relationship  $R$ . This indicates the dynamics of element  $Y$  is in relation with system  $S$ . This indicates the dynamics of element  $Y$  in the relationship  $R_1$  will have a different dynamic if the relationship  $R_2$  exists. In the context of human beings, each human being is a unique and non-isolated life form, whose biological and psychological dynamics are related and co-evolve with the dynamics of other systems, for example, social, physical and environmental ones. A biopsychosocial model has been systematically developed by Engel (35). In this model, to understand a person's health, well-being and illness, the subject is analyzed systematically, considering not only biological aspects, but also the types of thoughts and feelings that a person experiences, the internal dynamics of the person, but also interpersonal dynamics, which include the quality of relationships with others in a social context. Subjective factors are clearly fundamental in determining a person's health, well-being and illness. The determinants of illness are the result of complex multisystemic relationships between biological, psychological and social dimensions, and not only one of them is the primary cause of illness, as the biomedical model suggests. In the biopsychosocial model, there is no clear and fixed boundary between health and illness. This is because many psychological and social variables are constantly at play, and the model seeks to understand both the illness and the person. In this complex situation, the professional who follows this model in nephrology and dialysis care must understand and define the person's illness, considering his or her worldview, values, ideas and prejudices.

Some studies have specifically addressed the biopsychosocial aspects applied to nephrology and dialysis care. The study of De Beir et al. (36) shows that a biopsychosocial

model is essential in post-transplant care to meet the complex needs of kidney recipients. Multidisciplinary, tailored support combining education with individualized exercise programs should promote overall well-being and embed rehabilitation into daily life by addressing both physical and psychosocial dimensions. Another study shows that the routine psychosocial screening paired with targeted interventions that address anemia, promote physical activity, and support mental health is critical for optimizing post-transplant care. Embedding a biopsychosocial model in routine practice can improve adherence, enhance graft survival, and bolster quality of life in this vulnerable population (37). The study of Sluiter and colleagues (38) shows that among people with CKD and their caregivers, social participation is markedly constrained by the disease burden, its treatments, and fears about health risks, e.g., infection. These limitations erode mental health, especially self-esteem and feelings of belonging, in both patients and caregivers. Additional interventions are required to strengthen social connectedness in this community.

### Psychoneuroendocrineimmunological model

The PNEI model posits functional linkages between the psyche and the nervous, endocrine, and immune systems, which jointly determine health, well-being, and disease (39). As an interdisciplinary field, PNEI investigates how central nervous, endocrine, and immune interactions regulate psychological and physical health and maintain homeostasis in response to stressors. Psychological factors, stress, emotions, beliefs, and attitudes significantly modulate the activity of these systems (39). Chronic stress dysregulates the HPA axis, increasing cortisol levels and suppressing immune function. Within this network, the nervous system constitutes the primary communication pathway between the brain and peripheral organs. The autonomic nervous system, comprising sympathetic and parasympathetic branches, regulates physiological responses to stress and other stimuli. Sympathetic activation elicits the "fight-or-flight" response, increasing heart rate, blood pressure, and the release of stress hormones such as adrenaline and noradrenaline. Hormones, including cortisol, adrenaline, and thyroid hormones, are central to immune regulation, metabolism, energy balance, and stress reactivity, so endocrine dysregulation therefore exerts major psychological and immunological effects. The immune system communicates bidirectionally with the central nervous system via neural and endocrine pathways, so that brain activity modulates immune responses and, conversely, immune activation feeds back to the brain. Stress-induced cortisol secretion suppresses immune cell activity, increasing susceptibility to infection. PNEI highlights reciprocal feedback loops among psychological, neural, endocrine, and immune processes (39). Stressful stimuli activate the HPA axis, increasing cortisol and thereby dampening immune function, whereas immune activation induces inflammatory cytokines that influence mood and behavior. Within this network, neuropeptides provide key molecular signals linking the nervous, endocrine, and immune systems. Synthesized and released by neurons, they act as neurotransmitters, neuromodulators, and hormones, regulating neuronal activity and synaptic transmission. In PNEI, peptides such as CRH and NPY modulate the HPA axis



and stress response, while also shaping immune functions, including cytokine production and leukocyte trafficking and mediating neuro-immune communication (39). Neuropeptide signalling is bidirectional, where the neural activity regulates their synthesis and release, which modulates endocrine and immune activity, whereas endocrine and immune signals in turn influence neuronal function and neuropeptide production.

Dysregulation of the autonomic nervous system, characterized by sympathetic overactivity with concomitant parasympathetic withdrawal, is highly prevalent across the spectrum of CKD and end-stage kidney disease (ESKD), and can be quantified as cardiovascular autonomic neuropathy in a substantial proportion of patients undergoing nephrological care (40,41). Mechanistically, chronic renal injury promotes increased sympathetic drive through activation of renal afferent nerves, renin-angiotensin-aldosterone system stimulation, volume overload, anemia, oxidative stress, and low-grade inflammation, while baroreflex and cardiopulmonary reflex sensitivity are blunted. The net effect is persistent sympathetic activation with inadequate vagal counter-regulation (42). This imbalance contributes to a pro-inflammatory milieu and accelerates both renal and cardiovascular damage in CKD. Functionally, sympathovagal imbalance is captured by reduced heart rate variability (HRV), impaired heart rhythm complexity, and other dynamic indices of autonomic modulation, which consistently show depressed parasympathetic indices and altered sympathovagal ratios in CKD and dialysis cohorts (43). In dialysis patients, narrative and empirical data indicate that HRV is frequently low at baseline and may show limited adaptive change during treatment, reflecting a rigid autonomic response to hemodynamic stress (43). Clinically, autonomic dysregulation in chronic renal disease is strongly associated with adverse cardiovascular outcomes. Reduced HRV and other markers of autonomic disturbance independently predict all-cause and cardiovascular mortality in ESKD patients on HD, underscoring the prognostic relevance of sympathovagal imbalance in this population (44). These findings support the use of ANS-based metrics for risk stratification and highlight autonomic dysfunction as a potential therapeutic target in nephrology and dialysis care (45). In the review of Zoccali et al. (45), synthesizing evidence that sympathetic overactivity and reduced vagal tone in CKD sustain systemic inflammation. Highlights neuroimmune crosstalk as adrenergic activation of immune cells or vagal anti-inflammatory pathways, suggesting targeting autonomic balance, lifestyle, drugs, and vagus nerve stimulation to modulate inflammation and clinical endpoints. In the clinical pilot study of Hilderman and Hökfelt (46), findings showed that the positions of autonomic-immune coupling as a modifiable driver of CKD inflammation. Another study shows that across sessions, HRV metrics remained blunted, indicating persistent autonomic dysfunction in HD, so it is important to apply interventions that restore parasympathetic activity and reduce sympathetic drive (47). However, this dysregulation does not appear to be the primary cause in the early stages of many diseases (e.g., hereditary or genetically mutated kidney diseases), but rather a secondary effect, appearing in the later stages of CKD and in turn amplifying the damage.

## Promotion and prevention of psychological health

Psychological health is a fundamental element of an individual's general well-being in nephrology and dialysis care. The promotion and prevention of psychological health and well-being are based on a multidimensional approach that involves different levels of analysis, including biological, psychological, social and environmental influences on the psychological health of individuals (48). It includes the ability to adapt to life circumstances, to manage stress, to maintain satisfying relationships and to develop a sense of self-esteem and self-realization (49). The promotion and prevention of psychological health aim to improve these abilities and prevent the onset of psychological disorders. An important model is that of the social determinants of health, which emphasizes the importance of social, economic and environmental factors in psychological health. It explores how social inequalities can influence access to resources and opportunities that contribute to psychological health. Self-determination theory suggests that psychological satisfaction depends on the fulfilment of desires for autonomy, competence and social relationships. This theory provides a basis for the development of interventions aimed at promoting people's feelings of autonomy and competence. Education and awareness of factors that influence psychological health can help people recognize early signs of psychological problems and take action to promote mental well-being. Public campaigns, educational programs, and online resources can disseminate information about mental health and promote healthy behaviors (50). Resilience-based interventions aim to increase people's ability to cope with stress and existential problems. Such interventions include training in coping skills, promoting positive thinking, and facilitating social support networks. Activities that promote psychological well-being include evidence-based complementary care practices that can improve mood, stress management, and quality of life, and in recent years, with the use of technologically advanced digital health interventions, e.g., virtual reality (51). Screening and early identification of mental disorders are essential to intervene promptly and prevent worsening symptoms. Screening programs can be implemented in health centres and schools to identify individuals at risk of developing mental disorders. Stigma associated with mental disorders impedes access to mental health services and contributes to the discrimination and social isolation of people with these disorders. Interventions to reduce stigma and increase understanding of mental health issues can help create a more welcoming and inclusive environment. Early intervention programs aim to provide early support and treatment to people who show the first signs of mental disorders. These programs include psychotherapy, family therapy, and psychological support to help people manage symptoms and prevent the disease from worsening. Public policies that promote mental health include investing in mental health services, promoting healthy work environments and reducing social inequalities that affect mental health. These policies can have a significant impact on the mental health of entire populations. Designing healthy living environments can also facilitate the promotion of mental health. This includes creating accessible green spaces, promoting active transportation options

and reducing environmental pollution that can affect mental health. Measure and evaluate the effectiveness of mental health promotion and prevention interventions to ensure that they meet the specific needs of the target population. This includes the use of standardized measures to assess psychological well-being and monitor changes over time.

In the nephrology and dialysis field, literature shows some articles about the promotion and prevention of psychological health. In the trial by Dingwall et al. (52), a culturally adapted digital psychological program for people on HD improved distress and well-being. The trial demonstrates the feasibility of embedding mental health promotion in routine HD sessions. Findings argue for early, strengths-based prevention targeting resilience and cultural safety. The study by Fischer et al. (19) shows the importance of a systematic mental health surveillance function as secondary prevention. Results argue for integrating standardized screening into predialysis pathways, where an early identification may facilitate timely psychosocial intervention and care coordination. In the article by Alfieri et al. (53), prioritizing prevention, early diagnosis, and coordinated multidisciplinary care is essential to reduce its rising impact, and World Kidney Day serves as a call to mobilize global efforts in prevention, innovation, and patient-centred care. The papers by Mariani and Lucchetti (54) show that the evidence suggests that adopting an anti-inflammatory lifestyle may yield the greatest overall health benefits in patients with CKD. In a cross-sectional interview-based study, findings show that the marked prevalence of depression, generalized anxiety, and reduced quality of life among HD patients and the need for caregivers to provide structured psychological support and counselling to patients and their families. This methodology can strengthen mental well-being and help prevent the emergence or worsening of psychological disorders (55).

### Treatment and maintenance of psychological health

The treatment and maintenance of psychological health and well-being are fundamental aspects of psychology and mental health and impact in nephrology and dialysis care. The promotion of an optimal psychological balance is essential to manage existing mental disorders, improve quality of life and prevent worsening symptoms. There are numerous and different types of interventions that can be used for health psychology. In psychotherapy, the most used are cognitive-behavioral therapy, psychodynamic therapy, hypnotherapy, brief strategic therapy, systemic-relational psychotherapy, Gestalt psychotherapy, transactional analysis psychotherapy, and psychosynthesis. In addition, psychological counselling and support provide a safe and professional environment in which people can find a path of help for the promotion and maintenance of their mental health. In addition to psychotherapeutic and psychological approaches, there is a variety of complex evidence-based interventions, e.g., guided imagery techniques, visualization, deep breathing, meditation, mindfulness, autogenic training, music medicine, yoga, and the use of nature, which can help reduce stress and promote physical and mental relaxation. Health psychology is obviously also connected to lifestyles. The positive effect on mental health of regular exercise, a balanced diet, and good quality sleep is well known. Finally, social participation and

community involvement play an important role in promoting psychological well-being. Participation in significant social activities and groups can provide a sense of belonging, social support, and opportunities for connection with others.

In the nephrology and dialysis field, the literature shows some papers regarding to treatment and maintenance of psychological health. In a systematic review, findings show that among adults in HD, cognitive-behavioral therapy, structured exercise, and relaxation techniques likely reduce depressive symptoms with moderate-certainty evidence. Cognitive-behavioral therapy also likely improves health-related quality of life. Evidence for spiritual practices, acupressure, telephone support, and meditation are of low certainty. Likewise, data on whether psychosocial interventions affect suicide risk, major depression, hospitalization, HD withdrawal, or adverse events are of low certainty (56). In an observational study, the application of music medicine shows new, better behaviors as singing, handclapping, rhythmic movement, frequent smiles and laughter, an overall sense of well-being, and enhanced communication between patients and professionals (57). In a systematic review and meta-analysis, findings show that the psychosocial strategies probably reduce depressive symptoms in patients with CKD in HD, and support embedding psychosocial care to prevent escalation of distress (58). In the study by Erickson and colleagues, psychological and social support was correlated with lower depression/anxiety and better sleep in patients receiving HD (59). In an RCT, the mindfulness practice combined with progressive muscle relaxation can ease psychological stress, lower skeletal muscle tension, support muscle anabolism, and markedly improve sleep, anxiety, and depressive symptoms in HD patients (60). In another RCT, pre-transplant psychological counselling for HD patients may mitigate negative emotions and enhance overall mental well-being (61).

### Conclusions

Highlights how health and well-being psychology has become a central theme over the years, which not only affects people's lives but also requires a broad, global, systemic vision on the part of health professionals and health policy. The introduction of health psychology, as a science that studies the psychological determinants of health-related behaviors, in particular, which variables influence individual decisions in adopting or avoiding health-promoting behaviors, has opened a new path for the psychology of health and well-being. The WHO had already introduced a systemic concept of health in 1948, connected to the possession of not only physical, but also psychological and social well-being, which must be complete. From the ancient Greeks through key thinkers (Socrates, Plato, Hippocrates, Galen, Aristotle, Descartes, von Bertalanffy, Alexander, Freud, Groddeck, Engel), with the various psychosomatic, psychodynamic, biopsychosocial, psychoneuroendocrinological models, the biomedical, reductionist Cartesian-Newtonian model is overcome, to arrive at a vision of health, well-being and disease of a systemic, circular, global nature, where the person is considered as a unique, non-fragmentable being, with his own vision of the world, his own culture, beliefs, desires, intra and interpersonal relationships that impact his way of perceiving health, well-being

and disease. This personal world becomes a wealth of useful information to generate a personalized, patient-oriented system of promotion and prevention of health and psychological well-being in nephrology and dialysis care.

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