

SYSTEMATIC REVIEW

# Emotion Regulation in Chronic Kidney Disease - A Systematic Review

Shaurya Kaul<sup>1</sup>, Amra Ahsan<sup>2</sup>, Narinder Pal Singh<sup>3</sup>, Anish Kumar Gupta<sup>4</sup>

## ABSTRACT

Emotional regulation encompasses both positive and negative sentiments, as well as how to strengthen, use, and manage them. Chronic illnesses often face sudden changes in behavioural expectations, which can lead to emotional distress associated with self-management behaviours. CKD patients with or without dialysis, experience emotional disturbances that negatively impact their quality of life, including mental, emotional, spiritual, social, physical and financial worries. The relationship between emotional distress and emotion regulation is unclear, but the article suggests that patients experiencing emotional distress may struggle with emotion regulation. The article also suggests that problems with emotion regulation can impact health, and there are various predictors of increased issues with emotion regulation. This systematic review is focus on providing a summary of empirical literature on process model of emotion regulation, factors influencing emotion regulation, assessment and clinical implication of emotion regulation in CKD patients with or without hemodialysis.

**Keywords:** Emotion Regulation, Chronic Kidney Disease, Dialysis, patient, physical health, Chronic Sickness covered the years 2000 through 2022 utilizing Pub Med, Science Direct as the search engine.

<sup>1</sup>PhD Scholar, Faculty of Behavioural Sciences, <sup>2</sup>Associate Dean and Associate Professor, Faculty of Behavioural Sciences, Shree Guru Gobind Singh Tricentenary University, Gurugram

<sup>3</sup>Dean Research (Volunteer), Eternal University, Baru Sahib, HP, India

Advisor Research, Faculty of Medicine and Health Sciences, Shree Guru Gobind Singh Tricentenary University, Haryana, India

<sup>4</sup>Consultant (Research & Development), Faculty of Medicine and Health Sciences, Shree Guru Gobind Singh Tricentenary University, Gurugram - 122505, Haryana, India

**Corresponding Author:** Dr. Amra Ahsan, Associate Dean and Associate Professor, Faculty of Behavioural Sciences, Shree Guru Gobind Singh Tricentenary University, Gurugram, Haryana, India

**E-Mail:** amra\_fbcs@sgtuniversity.org

**Received:** 02<sup>nd</sup> November 2022

**Accepted:** 11<sup>th</sup> December 2022

**How to Cite this Article:** Kaul S, Ahsan A, Singh NP, Gupta AK. Emotion regulation in Chronic Kidney Disease - A systematic review. *Int Med Sci Acad* 2023;36(1):107-110.

**Access this article online :** [www.jimsaonline.com](http://www.jimsaonline.com)



## Introduction

Tropical countries are experiencing significant shift in public health due to economic development and changing lifestyle choices. As a result, traditional public health strategies focused on contagious communicable disease need to be re-evaluated. Non-communicable disease and their risk factors are becoming more prevalent, with chronic kidney disease (CKD) emerging as a global public health problem [1]. CKD is characterized by kidney structure or function abnormalities that negatively impact health for over three months. According to the KDIGO guideline [2], criteria for CKD include decreased GFR <60 ml/min/1.73 m<sup>2</sup> along with one or more markers of kidney damage such as albuminuria (ACR >30 mg/g), urine sediment abnormalities, electrolyte and other abnormalities due to tubular disorders, abnormalities detected by histology, structural abnormalities detected by imaging, and history of kidney transplantation. Global CKD cases were estimated at 697.5 million with a prevalence rate of 9.1%. Mortality rates increased by 41.5% from 1990 to 2017 with CKD now ranking as the 12<sup>th</sup> leading cause of death [3]. India accounted for approximately 17% of global CKD cases [4]. End stage renal disease (ESRD) define as an eGFR

less than 15 ml/min/1.73 m<sup>2</sup>, can be managed with supportive care or kidney replacement therapy. CKD patients with or without dialysis, experience emotional disturbances that negatively impact their quality of life, including mental, emotional, spiritual, social, physical and financial worries [5,6]. Dialysis patients experience a high symptom burden, including depression, anxiety, cramps, fatigue, insomnia, and frustration, along with a low health-related quality of life and shortened life expectancy. Traditional risk factors for poor outcomes with CKD patients include depression, anxiety, stress and personality disorders [7-9].

Emotion regulation is a multi-componential psychological strategy or process by which individuals influence which emotion they have, when they have and how they experience and express the emotion [10]. It is associated with a range of psychological and physical variations which are related to disease and its treatment management. Negative emotions include fear, anxiety, depression, regret, anger, sadness whereas positive emotions include joy, happiness, optimism, hope. Emotion regulation have been researched extensively in non-clinical samples, but there are limited data available from populations with chronic health problems.

Observation of association of emotion regulation with chronic illness such as CKD has been gaining attention in the literature.

### Search Strategy

Search terms used in the literature included “Emotion Regulation,” “Chronic Kidney Disease,” “Dialysis,” patient, physical health and “Chronic Sickness” and covered the years 2000 through 2022 “utilizing Pub Med, Science Direct as the search engine.” Due to the modest number of research publications that met the criteria for this evaluation, a longer time period was chosen, and keywords that covered both general sickness terms (physical health and chronic illness) and the chronic disease category were used as chronic kidney disease. A manual search of references referenced in journals added more publications pertinent to the review. Articles were considered if they were written in English, targeted elements of emotion regulation, and addressed health outcomes in persons with chronic illnesses. Publications that focused on the emotion management of the carer or family member or whose population did not include patients with persistent physical ailments were removed.

### Psychological adaption to chronic kidney disease

Cognitive, emotional, and behavioral responses to a chronic illness often occurs simultaneously in a bidirectionally manner [11]. Psychological adaption to chronic kidney disease have been described in figure 1.

### Process model of emotion regulation

Emotion regulation is a coordinated set of experientials, behavioural, and physiological responses that influence how we answer perceived challenges. Emotion can be regulated during the emotion generation process at 5 points such as- a) situation selection, b) situation modification, c) attention deployment, d) reappraisal (change of cognition) and e) suppression (modulation of responses-experientials, behavioural, and physiological) [12,13]. Gross & John., (2003) recommend cognitive reappraisal (a type of cognitive change) and expressive suppression (a type of response modulation) strategies for down regulation of emotion (Fig. 2) [13]. Reappraisal

refers to generating an emotion eliciting condition which consists of changing the way a situation down regulate emotion, for example from “This thrice a week dialysis interferes with my daily activity” to “This thrice a week dialysis is improving my quality of life”. Whereas suppression refers to inhibiting/hiding outward sign of inner feelings, for example hiding distress with a blank face.

### Factors influencing emotion regulation in CKD population

Psychological conditions like depression, anxiety, stress, and personality disorders are well known risk factors for poor outcomes with CKD patients [7,8]. Preoccupation with and fear of death, and time-consuming treatment plan/multiple medications are newly recognized sources of psychological distress in patients suffering with CKD. They experience emotional disturbances which can lead to negative emotion regulation and can impact the quality of life (QoL) and its various domains viz. physical, cognitive, and social domains. Decreased anxiety, stress, and depressive symptoms, increased physical function, absence of chronic illness, male gender, increasing age, higher education populations were found to use more adaptive emotion regulation [14,15].

### Measurement of emotion regulation in CKD

There are numerous measurement tools available for emotion regulation. Scales specifically designed to measure emotion regulation that were used most frequently included the 10-item Emotion Regulation Questionnaire (ERQ), 5-item RAND 36 emotional well-being subscale, Difficulties in Emotion Regulation Scale (DERS), Levels of Emotional Awareness Scale (LEAS), and the Emotional Regulation Scale (EMOREG-24) [16-19]. The General Well-Being Schedule, and the Emotionality, Activity, Sociability temperament survey for adults is also used to measure emotion regulation. Gross & John’s ERQ consists of a 10-item scale designed to measure individual’s tendency to regulate their emotions in two ways:

- 1) Respondents change the way they think regarding the condition/situation they feel like inside environment (emotional experience - Cognitive Reappraisal) or
- 2) How respondents show their emotions in the way they behave, talk or whether respondent mask their feelings,

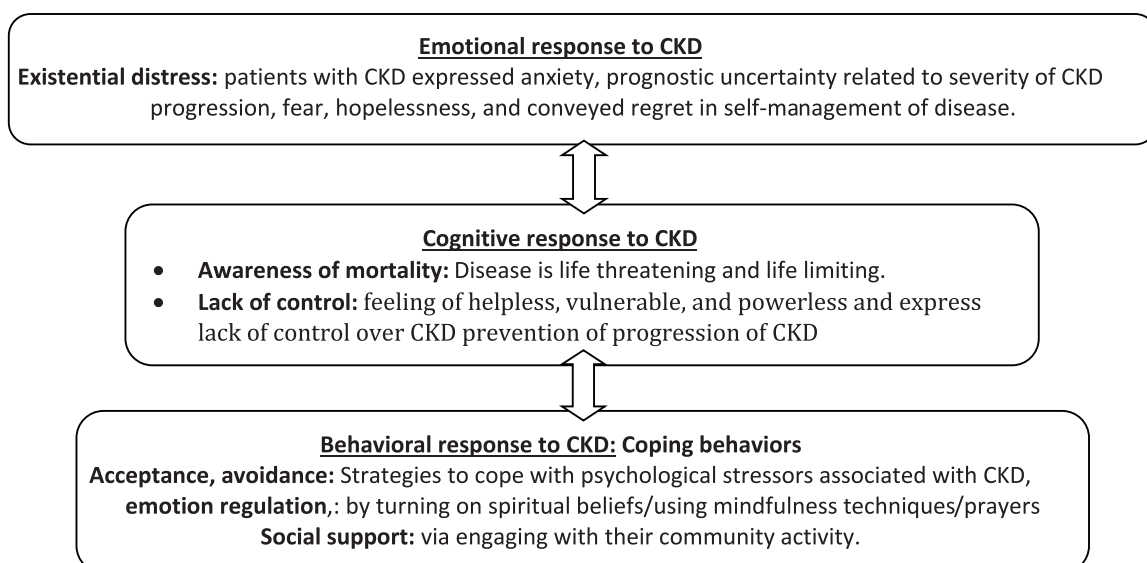


Figure 1: A conceptual framework of bidirectional relationship of psychological adaptation to CKD.

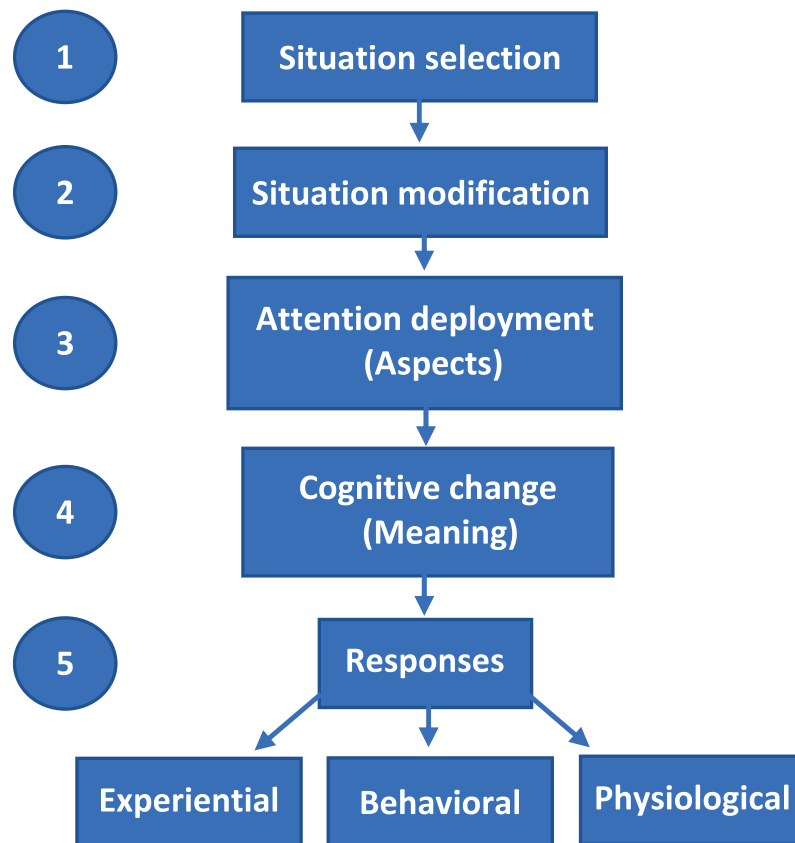


Figure 2: Five points process model of emotion regulation (Gross & John).

thoughts, and emotions from others (emotional expression - Expressive Suppression) [13]. The emotion regulation scale's internal consistency varied and, in some circumstances, was not recorded. The psychometric qualities of the scales were moderate to good for those that were reported. Cronbach's alphas between 0.74 and 0.89 were recorded by the ERQ.

### Clinical implication of emotion regulation in CKD patients with or without hemodialysis

CKD patients experience emotional disturbances which can lead to negative emotion regulation and can impact the quality of life (QoL) and its various domains viz. physical, cognitive, and social domains [5,20,21]. Assessment of emotion regulation helps to identify those patients with CKD who are suppressing their feelings, thoughts, and emotions, thus help initiate a referral to supporting psychological services, and establish an association with the treatment adherence. Assessment of emotion regulation strategy has important clinical implications for disease management (adherence to medications, diet, and exercise regimens) and well-being among CKD patients undergoing hemodialysis.

Treatment adherence is a multi-dimension behaviour in the CKD population that is influenced by five sets of factors comprising patient-related factors (lack of knowledge about disease and treatment, daily stressors, cognitive decline, perceived stigma, negative treatment belief and attitudes); social and economic factors (cost of transport and dialysis therapy/medications, lack of social support, education, and socio-economic status); healthcare system-related (poorly developed dialysis services, inadequate health insurance plan and inadequate training and engagement by the healthcare providers); treatment-related factors (complex drug

regimen, frequent medication adjustments, length of dialysis therapy, dissatisfaction poor therapeutic alliance and dis-satisfaction with side effect of treatment) and condition/disease-related factors (depression, cognitive impairment, co-morbidities) [22-25]. Literature has shown that non-adherence may be a sign of cognitive decline and emotional or psychological problem such as depression [5,6,26,27]. Thus, observation of emotion regulation in chronic diseases has been gaining attention in literature and it can play an important role in the treatment non-adherence and should be targeted in adherence interventions. In general, there was little evidence supporting links between emotion regulation and health outcomes. Further research is required despite the reported correlations between adherence and emotion regulation being present.

### Conclusion

This article provides important information on emotion regulation in individuals with chronic illnesses, such as CKD. This is crucial because those with chronic illnesses often face sudden changes in behavioural expectations, which can increase emotional distress associated with self-management behaviours. The relationship between emotional distress and emotion regulation is unclear, but the article suggests that patients experiencing emotional distress may struggle with emotion regulation. The article also suggests that problems with emotion regulation can impact health, and there are various predictors of increased issues with emotion regulation. There was evidence to support the idea that problems with emotion regulation had an impact on health, and it became particularly clear that there may be a variety of predictors of increased issues with emotion regulation. For instance, individuals with decreased anxiety, stress, and depressive symptoms, higher physical function, absence of chronic illness, male gender, increasing age, and higher education

tend to use more adaptive emotion regulation. However, the interaction between emotion regulation and illness perceptions is not well understood. To better understanding the effects of this concept on patients with chronic illnesses, further research should be conducted to examine these linkages with emotion regulation. It is essential to focus on patient outcomes, such as adherence or physical functioning, in relation to emotion management.

**Conflict of Interest:** All authors declare no COI

**Ethics:** There is no ethical violation as it is based on voluntary anonymous interviews

**Funding:** No external funding

**Guarantor:** Dr. Amra Ahsan will act as guarantor of this article on behalf of all co-authors.

## References

- Hill NR, Fatoba ST, Oke JL, Hirst JA, O'Callaghan CA, Lasserson DS, Hobbs FD. Global Prevalence of Chronic Kidney Disease - A Systematic Review and Meta-Analysis. *PLoS One*. 2016 Jul 6;11(7):e0158765.
- KDIGO. KDIGO 2012 clinical practice guideline for the evaluation and management of chronic kidney disease. *Kidney Int. Suppl.* 2013;3:163.
- Singh N P & GBD Chronic Kidney Disease Collaboration. Global, regional, and national burden of chronic kidney disease, 1990–2017: a systematic analysis for the Global Burden of Disease Study 2017. *Lancet* 2020;395:709–33.
- Varughese S, Abraham G. Chronic Kidney Disease in India: A Clarion Call for Change. *Clin J Am Soc Nephrol*. 2018 May 7;13(5):802-804.
- Kimmel PL. Depression in patients with chronic renal disease: what we know and what we need to know. *J Psychosom Res*. 2002 Oct;53(4):951-6.
- Kimmel PL, Peterson RA. Depression in end-stage renal disease patients treated with hemodialysis: tools, correlates, outcomes, and needs. *Semin Dial*. 2005 Mar-Apr;18(2):91-7.
- Palmer S, Vecchio M, Craig JC, Tonelli M, Johnson DW, Nicolucci A, Pellegrini F, Saglimbene V, Logroscino G, Fishbane S, Strippoli GF. Prevalence of depression in chronic kidney disease: systematic review and meta-analysis of observational studies. *Kidney Int*. 2013 Jul;84(1):179-91.
- García-Llana H, Remor E, Del Peso G, Selgas R. The role of depression, anxiety, stress and adherence to treatment in dialysis patients' health-related quality of life: a systematic review of the literature. *Nefrologia*. 2014;34(5):637-57.
- De Sousa A. Psychiatric issues in renal failure and dialysis. *Indian J Nephrol*. 2008 Apr;18(2):47-50.
- Gross, J. J. The emerging field of emotion regulation: An integrative review. *Review of General Psychology* 1998;2:271–299.
- Nair D, Bonnet K, Wild MG, Umeukeje EM, Fissell RB, Faulkner ML, et al. Psychological Adaptation to Serious Illness: A Qualitative Study of Culturally Diverse Patients With Advanced Chronic Kidney Disease. *J Pain Symptom Manage*. 2021 Jan;61(1):32-41.e2.
- Gross JJ. Emotion regulation: affective, cognitive, and social consequences. *Psychophysiology*. 2002 May;39(3):281-91.
- Gross JJ, John OP. Individual differences in two emotion regulation processes: implications for affect, relationships, and well-being. *J Pers Soc Psychol*. 2003 Aug;85(2):348-62.
- Gerolimatos LA, Edelstein BA. Predictors of health anxiety among older and young adults. *International Psychogeriatrics*. 2012; 24(12):1998–2008.
- Kubzansky LD, Thurston RC. Emotional vitality and incident coronary heart disease: Benefits of healthy psychological functioning. *Archives of General Psychiatry*. 2007; 64(12):1393–1401.
- Karademas EC, Tsalikou C, Tallarou MC. The impact of emotion regulation and illness-focused coping strategies on the relation of illness-related negative emotions to subjective health. *Journal of Health Psychology*. 2011; 16(3):510–519.
- Gianini LM, White MA, Masheb RM. Eating pathology, emotion regulation, and emotional overeating in obese adults with binge eating disorder. *Eating Behaviors*. 2013; 14(3):309–313.
- Baeza-Velasco C, Carton S, Almohsen C, Blotman F, Gély-Nargeot MC. Alexithymia and emotional awareness in females with Painful Rheumatic Conditions. *J Psychosom Res*. 2012 Nov;73(5):398-400.
- Messerli-Bürge N, Barth J, von Känel R, Schmid JP, Saner H, Znoj H. Maladaptive emotion regulation is related to distressed personalities in cardiac patients. *Stress Health*. 2012 Oct;28(4):347-52.
- Kurella Tamura M, Yaffe K. Dementia and cognitive impairment in ESRD: diagnostic and therapeutic strategies. *Kidney Int*. 2011 Jan;79(1):14-22.
- Sathvik BS, Parthasarathi G, Narahari MG, Gurudev KC. An assessment of the quality of life in hemodialysis patients using the WHOQOL-BREF questionnaire. *Indian J Nephrol*. 2008 Oct;18(4):141-9.
- Kaplan B, Mason NA, Shimp LA, Ascione FJ. Chronic hemodialysis patients. Part I: Characterization and drug-related problems. *Ann Pharmacother*. 1994 Mar;28(3):316-9.
- Xia M, Yan J, Liu S, Liu J. Beliefs of Immunosuppressive Medication Among Chinese Renal Transplant Recipients, as Assessed in a Cross-Sectional Study With the Basel Assessment of Adherence to Immunosuppressive Medications Scale. *Transplant Proc*. 2019 Apr;51(3):742-748.
- Schüz B, Wurm S, Ziegelmann JP, Warner LM, Tesch-Römer C, Schwarzer R. Changes in functional health, changes in medication beliefs, and medication adherence. *Health Psychol*. 2011 Jan;30(1):31-9.
- Dibonaventura M, Gabriel S, Dupclay L, Gupta S, Kim E. A patient perspective of the impact of medication side effects on adherence: results of a cross-sectional nationwide survey of patients with schizophrenia. *BMC Psychiatry*. 2012 Mar 20;12:20.
- Daley DJ, Myint PK, Gray RJ, Deane KH. Systematic review on factors associated with medication non-adherence in Parkinson's disease. *Parkinsonism Relat Disord*. 2012 Dec;18(10):1053-61.
- Horne R, Weinman J. Patients' beliefs about prescribed medicines and their role in adherence to treatment in chronic physical illness. *J Psychosom Res*. 1999 Dec;47(6):555-67.

