

# World Kidney Day 2021 with the theme of living well with kidney disease; a review of current concepts



Mohammad Bahadoram<sup>1</sup>, Saeede Labaykee<sup>1</sup>, Bhaskar VKS Lakkakula<sup>2</sup>, Bijan Keikhaei<sup>1</sup>, Mitra Nekouei Shahraki<sup>3</sup>, Soroush Mohammadi Jouabadi<sup>3</sup>, Macaulay Onuigbo<sup>4</sup>, Fariba Ahmadizar<sup>3</sup>, Mohammad-Reza Mahmoudian-Sani<sup>1</sup>, Payam Peymani<sup>3</sup>

<sup>1</sup>Chronic Renal Failure Research Center, Jundishapur University of Medical Sciences, Ahvaz, Iran

<sup>2</sup>Department of Zoology, Guru Ghasidas Vishwavidyalaya, Bilaspur, India

<sup>3</sup>Epidemiology Department, Erasmus University Medical Center, Rotterdam, the Netherlands

<sup>4</sup>Department of Medicine, The Robert Larner, M.D. College of Medicine, University of Vermont, Burlington, VT, USA

## Correspondence to:

Mohammad-Reza Mahmoudian-Sani,  
Email:  
mohamadsani495@gmail.com

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## Abstract

Since 2006, by considering one dimension of kidney disease, each year, the International Society of Nephrology (ISN) and the International Federation of Kidney Foundations (IFKF) have consistently and unanimously declared a World Kidney Day (WKD) around a specific kidney disease to increase the global awareness about kidney diseases. WKD, which is celebrated in more than 150 countries worldwide, is an international kidney health awareness campaign emphasizing the importance of the kidneys to reduce the global prevalence of kidney diseases and their related health problems by promoting patients and providing education. The present review aims to summarize the themes of previous WKD campaigns and the advocacy of the 2021 WKD campaign theme "Living well with kidney disease". The 2021 WKD Steering Committee advocates for the empowerment of CKD patients, their family members, and care partners, along with both drug and non-drug therapeutic programs to achieve better health outcomes.

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## Introduction

The International Society of Nephrology (ISN) and the International Federation of Kidney Foundations (IFKF) have jointly celebrated the "World Kidney Day (WKD)" on the second Thursday of March each year. Since 2006, WKD has been celebrated to increase awareness of the importance of the kidneys on our health to reduce the global burden of kidney diseases and their associated health problems. WKD is commemorated every year in more than 150 countries around the world. This review covered all the WKD's experiences and campaigns from the time of initiation of WKD to date to highlight the activities of the ISN and the IFKF during these years.

## Methods of study

For this narrative review, a comprehensive search was conducted in PubMed, Google Scholar and Web of sciences databases. The keywords included World Kidney Day, chronic kidney disease and acute kidney injury. To summarize the current state of research on this topic, case reports, review articles, and original articles related to this topic were retrieved.

## Key point

Chronic kidney disease (CKD) is associated with many complications and results in significant hardship for their care-partners. Unawareness of illness and lack of health professionals support make it difficult to live with a person with a chronic illness. The 2021 WKD Steering Committee calls for increased awareness and preventive measures using both drug and non-drug therapeutic programs.

## Retrospection on previous WKD campaigns

The theme for WKD in 2006 was "Are your kidneys OK?", which was a very successful campaign to raise awareness about the importance of kidney disease and kidney health among policymakers and the general public. Through interviews with patients and other community awareness programs, and with the help of the media, public attention and the attention of policy makers have continued to increase. The mission was to positively influence behaviors and attitudes of individuals towards early detection, prevention, and early treatment of kidney diseases (1). Further, the focus of this campaign was on early detection, treatment,

and prevention of chronic kidney disease (CKD) (2). The theme for WKD in 2007 was “CKD: Common, harmful and treatable”. Although CKD may not be a reversible process, the rate of CKD progression and other sequelae of CKD can be managed and controlled by managing risk factors. Therefore, WKD in 2007 laid considerable emphasis on developing strategies to recognize high-risk individuals through targeted screening and management strategies to slow CKD progression (3). The theme for WKD in 2008 was “Amazing Kidneys”, emphasizing the optimistic message that kidneys are genuinely amazing (4-7). This theme stressed increasing awareness of the simple facts about the kidney’s daily function. For example, such facts as “Every day our kidneys filter and clean 200 L of blood” were highlighted during this WKD campaign. The theme for WKD 2009 was “Protect your kidneys: Keep your pressure down”. In both diabetic and non-diabetic patients, hypertension is the leading cause of CKD (8). Hence the message for WKD 2009 was “Hypertension and kidney disease: a marriage that should be prevented” (8,9). Consequently, controlling hypertension has emerged as the most effective intervention in the management of all forms of CKD. However, most undiagnosed/diagnosed people with CKD are not aware of their diseases and related comorbidities (8). The theme for WKD in 2010 was “protect your kidneys; control diabetes” (10-12) and focused on diabetes as the most important cause of CKD (13). The theme of 2010 was aimed at improving the awareness of kidneys, and most importantly, ways to prevent the incidence of kidney disease (14, 15).

The theme of WKD in 2011 was “Protect Your Kidneys and Save Your Heart” (16-18). Renal impairment hastens the progression of heart disease and increases the risk of major adverse cardiac events and associated mortality. Hence WKD 2011 emphasized raising awareness about the relationship between kidney disease and heart disease (16). In addition, the presence of CKD would substantially increase the risk of cardiovascular disease (CVD) in patients with both hypertension and diabetes (16). Moreover, simple, feasible, and inexpensive CKD biomarkers such as proteinuria and glomerular filtration rate (GFR), can be monitored for early detection and enabling the prevention programs to reduce the incidence rates of CKD and CVD (16). The theme for WKD in 2012 was “Donate - Kidneys for Life - Receive”, which focused on the importance of the kidneys and reducing the incidence and impact of kidney disease and related comorbidities worldwide. It also aimed to nourish healthy behaviors, and encourage kidney donation (16,19,20). Besides, this theme provided an opportunity for the general public to learn more about the successful transplantation of kidneys in end-stage renal disease (ESRD) patients and increase the quality of life (QOL). Furthermore, this helped raise the awareness of governments and healthcare professionals for planning and establishing appropriate kidney transplantation programs, especially in developing countries, worldwide.

The theme for WKD in 2013 emphasized the importance of acute kidney injury (AKI) (21,22). AKI can be defined as a sudden decline in kidney function that is characterized by uremia with increased severity. Although AKI has multifactorial etiology, hemodynamic instability, sepsis, and drug toxicity are most frequently implicated. AKI occurs more commonly in hospitalized patients (5% to 10%) and patients admitted to the intensive care unit (60%) (1-5). Accordingly, efforts should be made to reduce morbidity and mortality caused due to AKI. Hence, community-wide initiatives are needed to raise awareness of catastrophic effects of AKI and to provide advice on prevention, early detection, and management. The theme for WKD in 2014 emphasized the association between CKD and ageing (23). The main reason for selecting this theme was the ever-increasing percentage of the elderly population and the associated heightened kidney disease burden, more than young people, and, this is due to reduced GFR, increasing diabetes and hypertension. Factors such as race, gender, age, and family history are important risk factors for CKD. Screening the vulnerable population and understanding the risk factors can result in early detection, and preventing the progression of CKD to ESRD through appropriate interventions (24-26). The theme for WKD in 2015, “Kidney Health for All”, had strongly highlighted the effects of poverty on CKD (27). The important mission of 2015 WKD was to increase awareness of CKD in disadvantaged communities. This theme also encouraged everyone to drink and offer a glass of water in honor of our kidneys. Further, factors related to poverty, including poor health, infectious diseases, limited access to sanitary water, and environmental pollutants, especially air pollution, could play a significant role in propagating CKD in developing countries (27).

The theme for WKD in 2016 was kidney diseases and children, which emphasized the importance of kidney function and blood pressure in children and babies. Compared to adults, the etiology of kidney diseases and methods of dialysis are entirely different in children. In addition, it is necessary to foster community cooperation, provide better education and improve access to prevention programs among high-risk individuals and populations, in order to address children’s kidney disease burden and reduce ESRD. In fact, paying special attention to attitudes and health-knowledge of young people by introducing basic techniques to prevent kidney disease will reduce the risk of developing kidney disease later in life and reduce the cost of managing kidney disease in the near future. Since obesity is a major risk factor for CKD, the theme of WKD in 2017 was obesity and CKD. Many studies focused on the effect of obesity on increasing rates of CKD (28-31). Obese living kidney donors had a slightly higher risk of ESRD than non-obese live kidney donors 20 years after donation, but weight control modalities may help to mitigate the disease (30-32). Moreover, the survival rate varies in CKD patients with or without obesity (33, 34). The theme for

WKD of 2018 was focused on CKD among women. Many physical and physiological factors, such as hormonal changes during menstruation, pregnancy, and menopause, make women more vulnerable to CKD. In addition, increasing prevalence rates of diabetes, hypertension, overweight, and obesity among women could increase the risk of CKD in women. Further, pregnancy-related health problems that impair the control of high blood pressure can be prevented through pre-pregnancy counseling. Several studies have documented higher morbidity and mortality rates of CKD among women (35). Nevertheless, there are also some reports about similar prevalence rates of CKD among men and women.

The theme for WKD in 2019 was “Kidney Health for Everyone Everywhere”, which focused on disparities and inequities due to social determinants of health. Kidney disease is associated with a substantial economic burden. Although patients receiving ESRD treatment make up only about 0.03 percent of the total population, some of the high-income countries typically spend more than 2–3% of their annual health budget on it. Unfortunately, CKD is a major contributor to catastrophic health care costs. The costs of dialysis and transplantation consume up to 3% of the annual health budget in high-income countries (36). The provision of and delivery of kidney care differs from country to country. The WHO’s Sustainable Development Goals include achieving universal health coverage globally by 2030. Reducing the burden and impact of kidney disease would be an important step towards achieving kidney health equity for a country or region (37). “Kidney Health for Everyone Everywhere - From Prevention to Detection

and Equitable Access to Care” was the theme of WKD 2020. The incidence and prevalence of CKD continue to grow rapidly and CKD is expected to become the fifth most common cause of life lost globally by 2040 (38). It is important to note that CKD onset and progression can be preventable. The WKD 2020 campaign clarified the importance of preventive interventions (36). Kidney disease can be prevented and progression to ESRD can be delayed with early detection and early interventions, including lifestyle and dietary modifications (39). As diabetes and hypertension are the two leading causes of CKD, effective primary prevention should focus on early monitoring of blood pressure and glycemic control and the management of other co-morbidities like cardiovascular diseases. Increasing public awareness of the risk factors for kidney disease through public education must be acknowledged to represent a key preventative measure.

### World kidney day theme for the year 2021

High-quality life with Kidney Disease, the theme for WKD 2021, aims to increase education and awareness about effective symptom management and the empowerment of both the patients and their care partners (Figure 1). With the ultimate goal of encouraging life participation, patient empowerment helps gain more control over decisions and actions that affect their health (40). Empowering patients by providing access to their personal medical information, improving health literacy, and involving patients in clinical decision-making is important for communication between healthcare providers and patients (41). Unawareness of illness and lack of health professionals’ support makes it

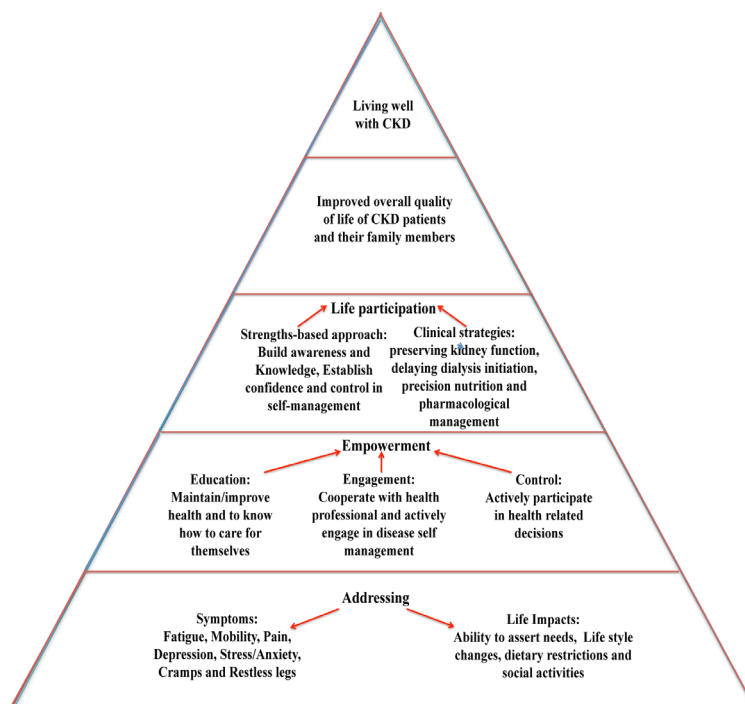


Figure 1. Representation of components of the quality of life of the CKD patients and care partners.

challenging to reside with a person with a chronic illness (42). Hence, the family members of the patient must receive information regarding kidney disease to facilitate their understanding of the patient's condition (43). Further, to facilitate self-management in chronic diseases, the patient-provider relationship must be more collaborative, resulting in increased adherence to treatment plans as well as improved patient satisfaction and health outcomes (44). Empowering patients for self-management of the disease also has a positive effect on the patient's psychological state (45). Hence patient empowerment is considered as a measurable patient-reported outcome for chronic conditions (46).

### Perspectives and Conclusions

The symptoms associated with CKD alter the physical, mental, financial, and social well-being and thereby influence overall QOL of patients and their family members (46). CKD patients desire to have a much better sense of their health and well-being, regardless of their kidney disease or stage of treatment. Furthermore, the validated life-long empowerment of CKD patients and their family members had to be considered for decision making in order to achieve the goal of living well with kidney disease. In addition to this empowerment of CKD patients, their family members and care partners must be empowered in order to achieve better health outcomes. The family members involved in coordinating the care of the CKD patients have reported depression, fatigue, isolation, and overload. It is essential to introduce appropriate measures to reduce patient and care partner physical or emotional exhaustion. Each year, ISN and IFKF jointly decide and declare the annual WKD theme to increase awareness about kidney diseases, their early detection, and prevention among the general public and policymakers. The 2021 WKD Steering Committee advocates for increased focus and resources on both drug and non-drug therapeutic programs to improve patient wellness. Home-based dialysis programs reduce patient and care-partner physical or emotional exhaustion and these should be tied with appropriate "assisted dialysis" programs. Lifestyle and diet modifications along with effective pharmacotherapy should be promoted for the prevention of CKD progression. As a plant-dominant low-protein diet is beneficial in preserving kidney function, precision nutrition and a personalized diet plan should be included in the conservative and non-dialysis-dependent CKD management. Further, recent clinical trials demonstrated that the sodium-glucose cotransporter 2 (SGLT2) inhibition preserves kidney function and improves overall kidney survival. Accordingly, SGLT2 inhibitors may be used for effective pharmacotherapy to reduce risks for both diabetic and nondiabetic CKD patients (47-49). Many activities related to CKD patient management programs around the world were overshadowed during the COVID-19 pandemic. Because

renal disturbances are common in COVID-19 patients, early detection of renal impairment and implementation of appropriate therapeutic measures to prevent AKI or CKD progression are essential.

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Primary draft by MB, MRMS and SL. Extensive edit by BVSKL. Additional edit by MNS, SMJ, PP and FAA. All authors read and signed the final paper.

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The authors declared no potential conflicts of interest concerning the research, authorship, and/or publication of this article.

### Ethical considerations

Ethical issues (including plagiarism, data fabrication, double publication) have been completely observed by the authors.

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