
Raising Community Early Awareness of Acute and Chronic Kidney Failure

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Abstract

Kidneys are vital organs that perform several crucial functions to maintain overall health like filtering waste, regulating blood pressure, and producing red blood cells. Despite their importance, kidney problems are often overlooked in daily health routines until they become serious. This makes it crucial to adopt habits that support kidney health. Raising early awareness of acute and chronic kidney failure is essential for early detection and prevention, since these conditions often go unnoticed, especially in primary care. Increased awareness about kidney failure should extend beyond specific high-risk groups and healthcare professionals to encompass the general public. This article focused on a health education initiative to improve community awareness about kidney disease and its management. The aim of this activity is to empower individuals with the knowledge and understanding to adopt healthy lifestyles and make informed decisions about their health, thereby enhancing their overall quality of life. The community service activities program was carried out in Pardomuan Nauli Village, Laguboti District, Toba Regency in June 2024. There is a growing understanding of individuals to take proactive steps how to prevent kidney failure, both acute and chronic conditions, for their own health, at the practical level in their daily life.

Keywords: *Acute and chronic kidney failure, Awareness, Community*

INTRODUCTION

The kidneys are vital organs in the human body. Healthy kidneys filter about a half cup of blood every minute, removing wastes and extra water to make urine. The urine flows from the kidneys to the bladder through two thin tubes of muscle called ureters, one on each side of the bladder. The bladder stores urine. Thus, kidneys, ureters, and bladder are part of urinary tract. Therefore, it is crucial for the public to understand the importance of kidney function through education and other informational resources (NIH, 2018). Despite their importance, kidney problems are often overlooked in daily health routines, many common lifestyle habits may be silently damaging these vital organs over time. These include overusing painkillers, excessive salt and processed food consumption, inadequate hydration, poor sleep, excessive meat or sugar intake, smoking, heavy alcohol consumption, and lack of physical activity (Jain, Singh, & Jain, 2022). The CDC U.S Centers for Disease Control and Prevention in 2024 stated that individuals with diabetes, high blood pressure, heart disease, and a family history of kidney failure are at increased risk of developing kidney disease.

The increasing burden of kidney failure is a major challenge for health systems around the world, particularly in low and middle-income countries (LMICs) due to growing demand for expensive kidney disease therapies (Tonelli et al., 2020). In terms of chronic kidney failure, approximately 674 million people live with chronic kidney disease (CKD), comprising 9% of the global population and concerned that kidney disease is one of the fastest-growing causes of death globally and is projected to become the fifth leading cause of death by 2050, with a

projected 33% increase in age-standardized death rate and a 28% increase in age-standardized disability-adjusted life years (DALYs) if no action is taken (World Health Organization, 2023).

In 2022, Indonesia reported a significant increase of acute kidney injury (AKI) cases in children. By 5 February 2023, over 300 cases were reported, and over half of them resulted in death. These incidents were associated with diethylene glycol (DEG) and ethylene glycol (EG). These toxic chemicals are commonly used in antifreeze but should never be found in medicines. Acute kidney injury (AKI) is the condition when the kidneys suddenly stop working properly. It can range from minor loss of kidney function to complete kidney failure. Acute kidney injury is a sudden and rapid deterioration of kidney function, leading to a build-up of waste products in the blood and disruptions in fluid balance. Acute kidney injury, if not promptly treated, can exacerbate illness and, in severe cases, contribute to increased morbidity and mortality (World Health Organization, 2023).

The incidence of AKI in children appears to be increasing, and the etiology of AKI over the past decades has shifted from primary renal disease to multifactorial causes, particularly in hospitalized children. Genetic factors may predispose some children to AKI (Andreoli, 2009). Hypertension is potentially linked with CKD through certain pathophysiological mechanisms. Hyperglycemia and insulin resistance, the causes of incident diabetes mellitus (DM), are also a serious problem in incident CKD. Kidney failure is potentially preventable, therefore it is crucial to recognize that kidney disease is a significant risk factor for, and consequence of, hypertensive disorders of pregnancy (impacting 1 in 10 pregnancies) and that both kidney disease and hypertensive disorders of pregnancy are associated with maternal mortality, and preterm and low-birth-weight neonates, who are at higher risk of kidney disease; kidney health is strongly impacted across the life course by all determinants of health, environmental factors, and climate change, and lifestyle (World Health Organization, 2023). Kidney disease can also affect children's lives in other ways, causing problems related to behavior, relationships, and self-esteem. Some children with acute kidney injury may need dialysis treatment to filter wastes and extra fluids from the blood for a short time while their kidneys recover. When a child's kidney disease is chronic, or long-lasting, treatment may slow the progression of the disease, ease symptoms, and manage complications (NIH, 2018).

According to Makmun in 2017, self-awareness is an essential baseline ability that reflects behavioral understanding and clarity (Dharmapatni & Putri, 2023). Although there are efforts to increase the public awareness of some non-communicable diseases, there are very few public health programs to improve kidney health globally and especially in low-income settings. On the other hand, in low-income settings, raising awareness, screening, and prevention of kidney diseases have been shown to be effective in improving the incidence of kidney failure as the awareness of kidney disease and its risk factors is low among the general public through some programs such as health education, campaigns, fundraising events, and advocacies (Tannor & Calice-Silva, 2022).

Based on the above, to effectively address the growing burden of kidney disease, there is a critical need to enhance community awareness and participation, particularly focusing on preventative measures for individuals not yet affected by the disease, namely through community service activities entitled "Raising community early awareness of acute and chronic kidney failure".

RESEARCH METHODS

This community service activity was carried out in several stages:

1. In the first stage: Preparation

The team analyzed the community situation officials. During these meetings, the village officials conveyed that many residents were anxious and concerned about the widespread prevalence of kidney failure in children recently, a situation that was widely reported in Indonesia. On the other hand, some residents were experiencing kidney failure and requiring dialysis, and some had even died from kidney failure. Most residents were unaware of the ins and outs of kidney failure. Based on these circumstances, it was agreed to conduct health educational activities for the community. The activity begins with the preparation of a proposal. Furthermore, we request a confirmation letter from the village officials. The target of the community service activity are residents in Pardomuan Nauli Village, Laguboti District, Toba Regency.

2. Implementation:

- a. Delivery of health education
- b. Discussions

The methods used in this community service are lecturers, discussions, case identification, and problem solving. The media used during the activity are LCD and power point in the form of pictures of material, and leaflets. We prepared an Educational Activity Plan as a guideline in order to achieve the intended outcomes of the activity.

RESULTS AND DISCUSSION

The community service was carried out in June 24, 2024 started from 08.30 a.m according to the Educational Activity Plan provided. The activity began with an opening which was attended by representative of the Puskesmas and all empowerment participants. Before the presentation of the material, we provided blood pressure checks and having participants signed an attendance form. The resource persons for this activity are lecturers and students. The material provided is in accordance with the printed out educational materials (leaflets) that had been distributed to participants, which is carried out by a team of lecturers.



Picture 1 Opening of The Activity**Picture 2. Blood Pressure Check**

The health education session on Acute and Chronic Kidney Failure was well-received by the community, by showing enthusiasm for the information provided by the team. The health education activity focused on providing information about acute kidney injury (AKI) and chronic kidney disease (CKD). During the activity, the team shared tasks, some were speakers, some were facilitators, and some were part of the documentation section to ensure the smooth running of the activity. The implementation was divided into counseling sessions with presentations and Q&A sessions.

Education, in its core, is about facilitating the acquisition of knowledge and skills to meet the needs of human life. It involves conveying specific information and fostering the development of competencies that are essential for individuals to thrive in various aspects of life (Anwar, 2015). Early detection and education about chronic kidney disease (CKD) are crucial for preventing complications and maintaining good health. Understanding the early symptoms allows individuals to seek timely medical attention and address any potential kidney issues promptly. Without early detection, CKD can progress to more severe stages, leading to kidney failure and the need for dialysis or transplant (Widjaja et al., 2023). Notoatmodjo's perspective stated that a person's knowledge and their behavior are directly related, meaning that a better understanding (knowledge) can lead to improved actions. In essence, Notoatmodjo's theory highlights the significant influence of knowledge on behavior, emphasizing that a strong base of knowledge can be a powerful catalyst for positive behavioral changes (Widyasari et al., 2021). Knowledge is very important in determining one's behavior because knowledge can be a person's foundation, which makes behavior last long (Putri & Wahyudiono, 2021). Knowledge significantly impacts one's belief, perception of reality, decision making, and ultimately, one's behavior (Desty, Arumsari, & Rohmah, 2021).

Community awareness is a crucial component of anticipatory action against diseases. Early warning can be enhanced by building enthusiasm and commitment to maintaining health, increasing knowledge of risk factors, and utilizing support systems (Harkey et al., 2017). Providing clear and accessible information about potential health risks empowers individuals to make informed decisions and take preventive measures which individually can take steps to look after the kidneys by:

- Keeping blood sugar levels under control
- Controlling blood pressure
- Avoiding long-term use of painkillers like Ibuprofen
- Stopping smoking to improve overall kidney and heart health
- Staying hydrated by drinking 6–8 glasses of water per day
- Maintaining a healthy weight through balanced eating
- Exercising regularly to improve circulation and kidney function
- Reducing salt intake by avoiding processed foods and not adding extra salt



Picture 3 Delivery of Health Education

The success of this community service activity was heavily reliant on the collaborative efforts of partners and active participation from the community itself. This partnership and community involvement are crucial for achieving meaningful and sustainable results in community development initiatives. Community participation ensures that the solutions developed are relevant to the specific needs and context of the community. This leads to more effective and targeted interventions.

At the end of the activity, to reinforce the message of promoting better health, physical activity, specifically exercises that help lower blood pressure, were incorporated into the activity's conclusion. This addition aimed to encourage participants to take proactive steps towards improving their health in their daily lives. By demonstrating these exercises, the activity emphasized the importance of incorporating physical activity as a lifestyle choice.



Picture 4 Closing, Post Physical Activity

CONCLUSION

Acute and chronic kidney failure, both are common worldwide problems, which impose a so far unrecognized global burden. Raising community awareness about kidney failure, both acute and chronic, is crucial for early detection, prevention, and improved health outcomes. This includes educating the public about risk factors, symptoms, and proactive steps they can take to protect their kidney health.

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