

## IMPACT OF DRINKING WATER QUALITY AND LIFESTYLE FACTORS ON CHRONIC KIDNEY DISEASE OF UNKNOWN ETIOLOGY PREVALANCE IN *MALWATHUOYA* CASCADE

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Chronic Kidney Disease of unknown etiology (CKDu) is one of emerging health problems in Sri Lanka. Though the literature has reported many causal factors, the exact root causes responsible for the disease are still unknown. However, many studies have shown that poor drinking water quality and human lifestyles have significant impacts on the prevalence of CKDu. This study attempted to verify the impacts of water quality factors and lifestyle factors on CKDu prevalence in *Malwathuoya* cascade. Water samples were collected from CKDu prevalence and non-prevalence households in *Ihalagalkulama* and *Sivalakulama* Grama Niladhari Divisions of *Galenbindunuwewa* District Secretary Division. Samples were collected from wells used during past 25 years period by CKDu prevalence and non-prevalence households in study areas. Samples were tested for several water quality parameters. Information on lifestyle factors were also collected through a questionnaire survey. The study finds that the concentrations of As and hardness are significantly higher ( $p < 0.05$ ) in CKDu prevalence households in comparison to non-prevalence households in *Sivalakulama*. Moreover, the average value of As in *Sivalakulama* lower than the SLS (614:2013) maximum permissible values, while the hardness and alkalinity of water are greater than the SLS maximum permissible values. The study could not identify significant differences of As, Pb, Mn and Fe in CKDu prevalence households compared to CKDu non-prevalence households in *Ihalagalkulama*. Moreover, alkalinity, As, Pb and Fe in both CKDu prevalence and non-prevalence households, Mn in CKDu prevalence households and  $\text{NO}_3^-$ -N in CKDu non-prevalence households at *Ihalagalkulama* exceeded SLS set maximum permissible values. The questionnaire survey revealed that the most of CKDu patients are farmers (92%) and they expose to heavy sun during the field work. The results also revealed that higher the use of agrochemicals and exposure to agrochemicals, the greater the prevalence of CKDu in *Malwathuoya* cascade.

**Keywords:** CKDu, Life style factors, Water quality