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## **An Investigation to Identify the Causes for Chronic Kidney Disease in the Vavuniya District**

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Chronic Kidney disease (CKD) is one of the major health issues in Sri Lanka, especially in the Northern and North Central areas. The Vavuniya district has recorded an alarming number of CKD patients, due to its natural environmental factors and human behaviour, which includes food selection, consumption patterns, incorrect use of cooking utensils, and ways of handling herbicides and pesticides in their agricultural activities. This study aims to identify the possible reasons and remedial measures for CKD in the Vavuniya District.

The principal objective of this study is to identify and analyze the factors affecting the prevalence of CKD in Vavuniya District. A methodology was formulated to collect primary and secondary data, based on the above objective. The primary data was collected through questionnaires, interviews, observations and lab experiments. The secondary data was mainly collected from previous literature and research reports in this field. The random sampling method was used for primary data collection. In addition, water samples from various drinking water sources were collected randomly and tested.

This study found that the Asikulam, Neriyaikulam, Nelukulam, Periyaulukulam, Periyapuliyanikulam, Marakkarampalai and Thonikal areas of Vavuniya District have a high prevalence of CKD. During 2009-2012 periods, about 225 deaths have been reported due to CKD. Typically, the 40-65 age group has been affected with CKD whilst the male populations are more vulnerable than the female. The male/female sex wise ratio is 2:1.

As a proportion of the total, 78% of CKD patients are male. At the same time, 18% of the patients have been identified as CKD with unknown etiology. The average fluoride level of the ground water is 0.85mg/l. Seventy five percent of the tested drinking water samples has a fluoride level of more than 0.6 mg/l. These levels of fluoride are adequate to affect a human's urinary system. The remaining 25% of the samples shows less than 0.6mg/l. Further, 76% of CKD affected people live in rural areas, and, of them, 60% are farmers. Seventy one percent of the people drink water without any pre-purification, and 98% of people use aluminum vessels for cooking purposes, which leads to CKD.

Therefore, frequent public awareness programmes at the local government level are essential to make the general public aware of the seriousness and causes of this disease and to change their attitude towards CKD. Using purified water for drinking purposes apart from the ordinary or tube well water, consuming healthy food, developing medical treatment facilities in the Vavuniya District, and handling agricultural activities with more care will help to mitigate the prevalence of CKD. The relevant stakeholders' participation is essential for the successful mitigation of this issue.

**Keywords: Chronic Kidney Disease, Environmental factors, Human behaviour, Fluoride level**