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Socio - Economic consequences of CKD families in North Central Province (With special reference to Padawiya area)

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Background

The concept of kidney disease is based on the presence of albuminuria and/or impaired renal function that lasts for more than three months. Kidney disease is associated with an increased total mortality and cardiovascular morbimortality in the general population. Chronic kidney disease is a one of worldwide public health problems. Chronic Kidney Disease (CKD), also known as chronic renal disease or chronic renal failure, is a degenerative, progressive condition marked by the gradual loss of kidney function. The experience is traumatic not only for the patients but also for their families who are frequently unable to provide the medical services needed due to the high cost of treatment. Optimally, CKD are treated with dialysis or kidney transplant.
Chonic kidney disease of unknown etiology has emerged as a major health care problem in the North - Central of Sri Lanka during the last few decades.

The aim of this study is to determine the prevalence of kidney disease and the identifying the responsibity of the government other authoritiesregarding solving this burning issue. Research problem is "Socio - Economic effects of CKD patients' families in North central province?"

Survey was conducted to identify the research problem and data was collected using questionnaires, Key Informant interviews and

focus group interviews. Research area was Padawiya in Padawiya Divisional secretariat. Sample was selected as a random sample of patients with CKD in Padawiya.

Following out comes were considered. As in developed countries, the most common symptoms of CKD are obesity, high blood pressure, and diabetes. There is a significant high rate of kidney patients in north central province in Sri Lankan context. Many researches were conducted to identify the causes and effects of the disease. Deferent researches have identified different causes including insecticides, fluoride water, poisons, arsenic, dehydration, drugs, smoking, affect from hard metals. Relevant to the research findings including spreading rate, sex ratio, geographical and environmental relations, food patterns, livelihood patterns, water resources are make a path to open a new discussion on these issues. The variables associated with the socio economic barriers relevant to family are more crucial. One-third of the sample population in this study has CKD patient. It makes very big problems their livelihood.

Key words: Chronic kidney disease, water, socio- economic barriers

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Introduction

Chronic Kidney Disease (CKD) is one of an important health issue in global. Common causative factors of CKD are glomerulonephritis, diabetes and hypertension. But there is a

relationship between patients who have CKD and their working sector as agricultural workers in Sri Lanka. Very common symptoms of CKD are fatigue, panting, lack of appetite, nausea and anemia. The disease is introduced as chronic because it takes many years for symptoms to develop.Renal function decline is gradual and often extremely painful(Elledge etal 2014). Categories of kidney failures are Urinary Tract Infection, Nephritis, Chorionic nephritis, renal calculi, Bladders calculi, renal cancers, and Poly cyststic kidney decease. Kidneys are the main body organs related to the CKD. Task of Kidneys are Balancing water level of the body, Control blood pressure, Excretion of organic matters in the body. According to the literature review CKD have emerged in Guatamala, Mexico, Bulgaria, Serbia, India and Sri Lanka as a big socio-medic problem. In Sri Lankan context, first CKD patient reported in 1990. North Central and North Western province are the most vital areas related to the high number of CKD patients. Most of patients are paddy farmers. On the other hand Uva, Eastern and Northern provinces also have CKD patients. But it is comparatively low when it compare with North Central provincial statistics. But the main affected sector is we know as paddy workers arẽ same in those other provinces in dry zone. Collectively theses five provinces have a resident population of over 2.5 million people. Researchers estimated CKD patients in the endemic areas were 20336 and it reaches over 25000 by the end of 2013 (Elledge et al, 2014).Within the last 15 years prevalence of the disease has increased dramatically.

There are two types of kidney failure are Acute Renal Failure and Chronic Kidney Disease. Patients with CKD mainly have to face for two matters. There are inabilities to work after getting CKD and

they cannot bare its high cost of treatments. The government also spends more money for dialysis and kidney transplantation.

Table 01 Three endemic districts and administrative divisions with population

District	Population	No of DS areas	Population range of DS	No of GND areas	Population Range of GND
Anuradhapura	856232	22	22227-69590	557	113-6013
Polonnaruwa	403335	07	36424-82138	292	126-5223
Badulla	811758	15	19540-100434	567	148-4315

Source: Jayasumana et al, 2014

The objectives of the study wereto determine the prevalence of kidney disease and the identifying the responsibility of the government other authorities regarding solving this burning issue. Research method was survey method. Data collecting techniques were questionnares, key informants interviews and focus group interviews. Sample was selected by random sampling method as used multi stage cluster sampling method. Research area is Padaviya in Padaviya divisional secretariat.

Table 02 CKD Patients in Anuradhapura District

No	MOH Area	2003 - 2008	2009	2010	2011	2012	2013 up to May	Total
1	Medawachchiya	2025	157	260	270	195	66	2973

2	Padaviya	1654	325	218	167	162	28	2554
3	Kebithigollewa	532	151	137	66	100	34	1020
4	Rambewa	414	102	104	92	65	19	796
5	NPC (Nuwaragampalatha Central)	207	42	75	96	41		461
6	NPE (Nuwaragampalatha East)	188	29	36	57	22		332
7	Kahatagasdigiliya	184	31	63	125	89	3	495
8	Horowpothana	153	39	67	66	81	8	414
9	Galenbindunuwewa	114	19	37	62	31		263
10	Mihintale	114	28	21	18	22	1	204
11	Thalawa	80	14	45	33	39	2	213
12	Nochchiyagama	74	23	22	27	60	2	208
13	Thirappane	64	6	24	34	7		135
14	Kekirawa	62	9	30	32	16		149
15	Thambuthtegama	52	6	33	26	122	10	249
16	Galnewa	33	11	22	11	23		100
17	Ipalogama	32	6	14	21	12		85
18	Rajanganaya	23	5	17	18	35	2	100
19	Palagala	13	3	14	14	5		49
	Out of the District	590	132	191	187	203	48	1351
	No Address	31	5	21	2			59
SubTotal		**6639**	**1143**	**1451**	**1424**	**1330**	**223**	**12210**

Source: PRDPU - NCP

Discussion

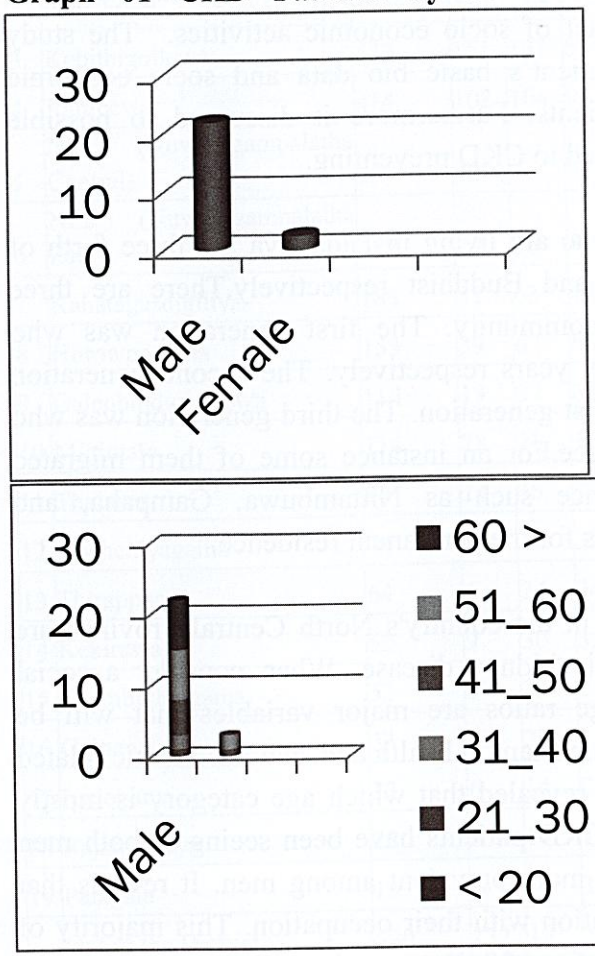
The research problem which was observed in the study was "Socio - Economic impact of CKD in North Central Province". This

research was done as a basic research as the key stage of CKD patients and its impact of socio economic activities. The study paid attention on patient's basic bio data and socio economic impact of CKD patients. Furthermore it discussed to possible remedial actions related to CKD preventing.

Among the people who are living in Padawiya are three forth of them are Sinhalese and Buddhist respectively.There are three generations in this community. The first generation was who migrated before thirty years respectively. The second generation was the children of first generation. The third generation was who were born in this place.For an instance some of them migrated from western province such as Nittambuwa, Gampaha, and Kelaniya area in 1950s for the permanent residence.

Thousands of people in the country's North Central Province are suffering from chronic kidney disease. When consider a social problem, sex and age ratios are major variables that will be discussed. It is very important in health and socio economic related matters. The table 03 revealed that which age category is mostly affected from CKD. CKD patients have been seeing in both men and women. But it is more prevalent among men. It reveals that there is strong association with their occupation. This majority of the patients are in age from 20. But now it can be seen with small children also

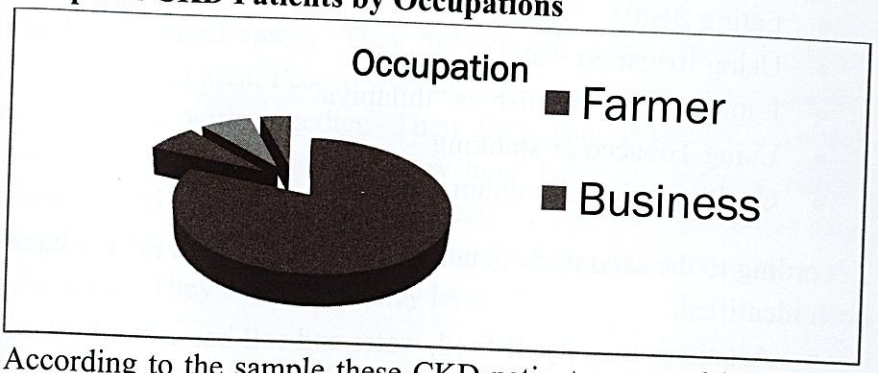
Graph 01 CKD Patients by Sex Ratio and Age Ratio



The mean of the age is age 30 to 70. All are rural residents. Most of patients identified their illness after they are in age in 60s because of CKD symptoms appeared in the late stages in the disease.Butthey are actively participating their farming till when they get ill.There is a trend that child below 15 years are been affecting to this CKD. Preventing unit of CKD in North Central province has been launching clinics in these areas for finding

patients. They conduct research and investigations on this issue. Therefore children are being diagnosed as earlier.

Graph 02 CKD Patients by Occupations



According to the sample these CKD patients engaged in different occupation sectors such as farming, small scale businesses, and government workers and so on. Majority were paddy farmers or agricultural laborers. Most of them have more than 10 year's experiences in agricultural workings. It is an important to note that, most of families were becoming female headed as their husbands who functioned as breadwinners had been died of CKD.The noticeable feature here is that these factors coming in succession appear as vicious circle. Stable marriages and families are important to the women.Many people think that if their kidneys fail, they will die earlier and earlier. But its depend on their life pattern and caring. They don't have an idea to engage with their occupations as earlier. They think as well as they feel of being tired and they fall asleep during the day even after 8 to 10 hours of sleep at night.

Most common reasons are being identified for CKD are as below.

- Current treatments for diabetes
- Severe hypertension
- Urinary Tract Infection

- Snake bites
- Drinking poison
- Eating Beatle
- Using Irrigation water
- Eating fresh water fish as "thilapiya"
- Using Tobacco or smoking
- Cooking using aluminum saucepan

According to the secondary data some potential causal factors have been identified.

- Asanic as toxicity: If food, water and soil has critical values of *asanic* is affecting.
- Heavy metals: Cd, Pb, Al, and as are common heavy metals. Higher concentrations of Cd (cadmium), uranium, lead, fluoride in water and food affects to kidney failure.
- Pesticides and Fertilizers.
- Water with high amount of florid and Aluminum: High groundwater fluoride levels
- De-hydration
- Medicine usage
- Alcoholism
- Smoking

Day to Day Life Pattern in Padawiya residents

The people who live in Padawiya area have raised three questions on reasons that affects to CKD as "unknown etiology". They have questions on two sectors as environment and behavior. Environmental questions are on water, soil and food. Researchers revealed some reasons related to water, soil and food. Habitats in Padawiya use dug well water, tube water and tank water. It is harmful to health because of high levels of heavy metals.

According to Medical officers advices they fixed a big pot to remain and collect rain water. There is a trend that they take water from natural water spring and tap borne water. There is a place that they have natural spring. They did not sell water. People collect water from that area. People who live more far areas are coming by land masters with together. Then they can share the cost of travelling. On the other hand they have habit on drinking bottle water. They have to spend 150 rupees for five liter bottle per one week only for drinking purpose. Some of them don't have strength to by water. They drink what they have.

Soil is the other questionable factor related CKD cause. Fertilizers and pesticides are more common item that use in agricultural sector. Arsenic and cadmium are some result of using fertilizers and pesticides.Farmers believe thatCadmium is found in some fertilizers and Arsenic is an active ingredient in some pesticides. Victims are not only human but also animals in this area. Soil again interferes to water and food. Farmers live in paddy fields more hours in the day. Famers are mostly men. Most of them don't think on their safety and they work in paddy some times in barefoot. Some of them don't use mass and hand gloves when they uses fertilizers and pesticides.

Aluminum utensils used for cooking and storing water, which enhance fluoride intake into the body,Cynotoxin that comes from blue green algae have also been hypothesized as possible causes. According to medical advices they use clay pots for cooking. They had habit to eat some foods special to this area such as fresh water fish as *"Thilapia"*, lotus tomatoes. But now they don't get those foods. They had as well as have habit of eat betle as villagers. They try to change their life pattern to get recovering this bad

disease. They work and spend more time in hot dry places as rice farmers. They donot take enough water at that time. But now they try to change their home utensils, drinking more water.

Special features of CKD patients of this area.

- Age 30-70, most of CKD are over 60 years.
- High amount of male patients.
- They don't know they have a kidney failure due to delay symptoms.
- 40% - 60% Kidney damaged when they identified the disease.
- Most of them were Farmers.
- Most of them were comparatively poor people.
- They have to spent more money for related to getting treatment.
- They can't engage with their early jobs.
- They can't engage with community works as earlier.

Treatments: There are no specific reasons found for CKD and as well there's still no specific treatment for CKD. CKD patients are advised to get early body checkup in North Central Province. The MOH office conducts clinics for this and gives medicines for them. There are continuing clinics for patients. Blood dialysis and kidney transplantations are the other treatments for CKD patients who are in final stage of their disease. Eight thousands patients are now undergoing dialysis treatment for late stage CKD in Sri Lanka. Nationally an estimated 4% of the public health budget is spent on renal disease (Elledge et al, 2014). Blood dialysis is much cost and people who live in remote areas have to come to the city. Patient who lives in Padaviya area has to spend more than 12000 rupees for each visit as traveling cost. They are getting blood dialysis from the government hospitals with free of charge. They have to

spend more than one day in the queue for getting a chance. Lack of dialysis facilities most of patients were died. Private dialysis service in Colombo costs approximately $ 65 (Elledge et al, 2014). Most of them were poor rice farmers. When they get ill, they have to sell their early earnings to take medicines. It directly negatively affect to their family members towards their nutrition, education, health and work. On the other hand patients with a chronic kidney disease must start a special diet plan to take extra care of their kidneys. But most of CKD patients are breadwinners in their families. Because of lack of Protein-energy malnutrition, Loss of lean body mass, Muscle weakness and tiredness they can't work as earlier. They are fear to be a kidney patient.

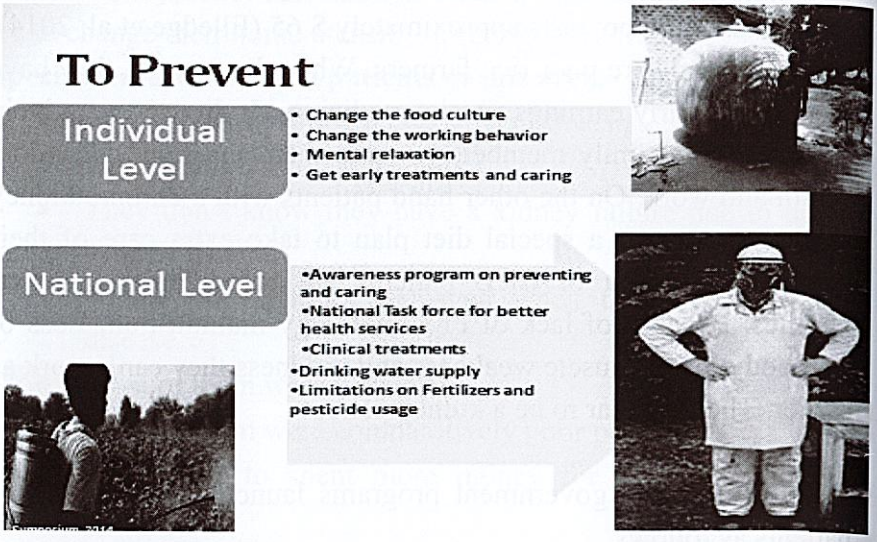
There are several government programs launch to prevent CKD patients as follows.

- Special clinic for CKD family members
- Counseling for CKD patients and families
- Providing special bus season card s to the patients
- Giving resource persons for other Institutions to conduct to the awareness programs
- Giving laboratory facilities
- Giving medicines to the patients continually
- Giving financial support to the patients

Conclusion

This CKD problem has multidimensional factors. Environmental, geographical, behavioral and socio-economic factors are being there. CKD are mostly seen in dry zones. There are doubtful source as *asanic,* cadmium, minerals, fluoride are the environmental and geographical risks. They have their own

behavioral pattern related to the environment as food pattern. It is directly affected to their life style.



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